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OLD AND NEW

LOGIC ;

BEING

AN ATTEMPT TO ELUCIDATE,

For Ordinary Comprehension,

LORD BACON DELIVERED THE HUMAN MIND FROM ITS
2000 YEARS' ENSLAVEMENT UNDER ARISTOTLE.

BY JUSTIN BRENNAN,

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PREFACE.

FOR some years past I have been occasionally writing essays, on different subjects, in the hope of being able, one day or other, to publish them. Of these, the present work is a specimen. But, as I proceeded, so many considerations pressed upon me that I could not confine it within the ordinary limits, and it insensibly swelled into a small book, instead of being only part of one containing several essays.

This will account for some circumstances that seem to require explanation. Had I originally intended it for a separate volume, I should have been more attentive to form and arrangement, and to what regards chapters or particular divisions. It is evidently deficient in that regular connexion which constitutes a *book*, as the extended Appendix shows. To make some amends, therefore, for the consequent inconvenience in perusal, I have

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given a longer table of contents than so small a work might otherwise appear to demand.

What I have now said will also, as I should hope, excuse me in another respect. At first I designed only to explain, for ordinary capacities, that long enslavement of the human faculties, which is rarely understood by common readers. My intention was to confine myself solely to that, but as I went on, and being obliged to consult authors of various conflicting opinions, I found the strongest arguments for the syllogistic theory so weak, that I could no longer restrain myself. On that point, I considered that it would be a dereliction of my duty not to express my real sentiments, and I, at length, proceeded to language of the most unreserved and decided character. This has made my treatise appear, in some instances, rather inconsistent. I was at first afraid of my own prejudices against that theory, and I spoke of it in qualified terms, compared to what I afterwards used. Yet, on reviewing the whole, I did not make any alteration—not even in the title. It is perhaps best to begin somewhat mildly, and to gradually increase the strength of expression. I am glad, therefore, that I did not think of

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Dr. Whately's work on Logic till I was pretty far advanced. Had I looked into it earlier, I might not have been able to speak of Aristotle with proper respect, for, though I was never peripatetically inclined, I must own that I approached him with timidity. But, on reading Dr. Whately's treatise, I gave all my scruples to the wind. Never was there a work better calculated, in my opinion, to make any thinking man a decided Baconian, though its object is directly the reverse.

As to attaining the end for which I originally took up my pen, I must of course wait with patience for the result. But, let that be what it may, I deem no apology whatsoever necessary for my undertaking this work. No one will deny the importance of explaining, for humble capacities, the 2000 years' enslavement of the human mind, and, as I can boldly assert that every similar attempt has hitherto failed, it should be followed up till successful.

My strictures on the classics flowed naturally from considering Logic as a subject of tuition, and from viewing them as also materially affecting the morals. They will probably appear extraneous, for I admit that they came unexpectedly, and did not form any part of my first

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design. It is for the public to pronounce on the propriety of their introduction here, and to decide, whether the time is come when the satyr-like absurdity of praising and teaching pagan and christian morality, both together in the same breath, should be reprobated.

The public being quite unused to find an author without some tincture of vanity, and as I have no ambition to set myself up for an exception, I may be allowed to mention, that I now follow the principles laid down in my work on "Composition and Punctuation." But, as it would be unpardonable to enlarge on them here, I shall only observe that their principal features are, the exclusion of the colon, semicolon, parenthesis, and notes in the text pages.

JUSTIN BRENNAN.

Dublin, December, 1838.

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PRELIMINARY EXPLANATION.

THERE are always many persons of humble attainments, or rather of confined education, who are, nevertheless, exceedingly anxious for some acquaintance with the higher branches of literature. But, however laudable their desires, they are most commonly disappointed. If they inquire of the learned they are just as wise as before, for, some how or other, your learned men can seldom make themselves intelligible, except to those who are conversant with the matter in question—that is, if you already know it they will explain it further ! The only resource then is books, but, though when professedly intended for the commonest capacities, they are found equally useless to the inquirer, unless he be a man of more than ordinary penetration and comprehension.

Now, I take all those failures to arise from want of examples. Without them, explanations will avail only for the few. Rules may be laid down unexceptionably clear, and still they will be of little general use. Suppose that our grammars contained nothing else, the child, though aided by a master, would learn but very slowly indeed. Even the article, which is perhaps the

simplest part of all, is much better comprehended by an example, and accordingly, after giving the rule that *a* is used before words beginning with a consonant, and *an* before words beginning with a vowel or *h* mute, there is added as a man, a horse, a cow—an ass, an eel, an hour. That little elucidation is a wonderful help to the understanding, and the comprehension is only in proportion to such helps. By some strange fatality, our grammars are remarkably sparing in examples of *who* and *whom*, and of the functions of the participle and past tense, and it is for this reason that we so often hear those, on whose education money has not been denied, saying *I seen*, *I have went*, *he sung*, *who* did you give it to? and such like violations of concord. When a friend corrects them, and they feel ashamed, they refer to the grammar, but there, seeing only rules which they cannot now lay themselves down to study, they give the thing up altogether, though a few well-explained examples would enable them to guard against such errors.

Yet, whatever may be said of former times, the present certainly cannot be charged with any churlish opposition to the spread of knowledge, especially the last fifteen or twenty years. Literature is now so decidedly a trade, and competition is so active, that any speculation promising remuneration is eagerly embraced, and able writers present the sciences with every attraction of plainness, for the gratification of those who desire information without painful study. Yet, owing to the want of that assistance

to which I have alluded, they are seldom satisfied, notwithstanding all those efforts to suit every degree of capacity—the grand cardinal defect is still unremedied. There is hardly any thing more interesting to those persons whom I described in the opening of this essay, than ancient and modern philosophy. This is very natural. When they frequently read of “the human mind being kept enslaved for two thousand years, till Bacon broke the fetters that Aristotle had imposed on it,” their curiosity is strongly excited, and no wonder, by an assertion so full of importance. They seek with avidity every source that promises familiar information, but they find them either too obscure, or devoid of instruction on the very points which they wish to have clearly explained. Watts’ *Logic*, though the object was, as he says himself, not to suffer the art to be engrossed by schoolmen, and to make it plain to all, gives them no satisfaction. It is now a hundred years before the public, and I think I may assert, that no one ever learned from it the difference between the systems of Aristotle and Bacon. In fact it almost studiously keeps that out of sight, inso-much that the reader who knows nothing previously of logic, is led to think that the author is describing a plan invented by himself. Though it is not my business to criticise his work, I may be permitted to remark, that it is strongly biassed towards the complicated machinery of Aristotle, and that is no recommendation as a book of instruction for youth. But several treatises have

appeared within the last fifteen or twenty years, the sole object of which was, to explain to common understandings the difference between the systems of Aristotle and Bacon, and yet not one of them has succeeded. This I can take upon me to boldly assert. For I have questioned several who read them attentively, and they have after some hesitation, for no one likes to be thought dull or stupid, frankly avowed, that they could not comprehend wherein lay that so much vaunted emancipation from two thousand years of intellectual bondage. Now I propose to supply this great desideratum, that is, I propose to attempt that in which so many others, in comparison to whom I am as an ignorant man, have failed! If I very properly here put a note of admiration, how much more will my masters be surprised at my presumption, when I state the following particulars:—

I know very little of logic, because I always disliked it—I mean that which is taught in colleges. Looking on it as a deception, and a dreadful waste of valuable time, how can I do otherwise than dislike it? My great consolation is, that so few understand it, and that the number of empty pedants is consequently much diminished. There are perhaps 15000 youths in the great colleges of England, Scotland and Ireland, and, if all of those understood the logic that they are there taught, it would indeed be a great calamity. Fortunately, however, not more than one in five hundred do understand it, and most of them forget it entirely after leaving col-

lege. But there are always some who recollect just as much as serves to make them ridiculous, and woe to the youth who fancies he can wield that of which he has only got a glimpse. For he then most assuredly becomes either a miserable sophister, or an unmeaning pedant, who perverts all his other acquirements to the most unprofitable purposes. His constant observation is, "I see no logic in that," while the plainest people are laughing at him, because he is himself the weakest arguer imaginable. When forced to yield, or rather when overpowered, by unanswerable objections, he scorns to avow conviction, and exclaims, "still I do contend that the premises are false," because the poor creature's head is stuffed with syllogistic notions of major and minor propositions, or conclusions affirmative and negative, which, if he had marshalled well, he is certain must have secured him a victory. He therefore thinks that he suffered only a negative, not a positive, defeat, and thus the vain dupe continues in darkness all his life, unless some ray of light may haply dart on his clouded intellect, and show him the futility and absurdity of his logical illusions.

Since Aristotle's philosophy has been exploded by all sensible men, our colleges dare not condemn Bacon openly, and yet they do it covertly, by treating his simple structure as a thing hardly worth notice! The truth is that they cannot bear simplicity. They wish to make every thing mysterious and complicated so as to appear scientific, and the showy system of Aristotle has,

consequently, with them peculiar charms. Yet they will rail, like others, against the difficulty of eradicating old prejudices—they will exclaim against farmers and country people for their slowness in adopting obvious improvements, while they are themselves so immoveable that it has been frequently asserted, and with justice too, that colleges have considerably retarded the advancement of science. Well and truly did Bacon observe, when he gave his *Organon* to the world, that he wrote not for his age but for future centuries. Above two of those centuries have since elapsed, and we are still, with all our boasting, “under the fetters of Aristotle.” We are, like the catholics under George III, only partly relieved—our complete emancipation is yet to come.

Having thus avowed both my ignorance and dislike of school or college logic, I may give an American *guess* that the learned, who may happen perchance to look at my work, will not read a line further, but that is of little concern to me, since it is not for them that I write. I could wish, however, to detain them a moment while I say, that the best proficients are not always the best teachers. He who is profoundly acquainted with an art, or a science, will often think that matters, which are quite clear to himself, must be so to others, and thus he dismisses, without an explanation, what is very difficult to the vulgar. Now as I know only just as much of logic as is sufficient for common information, and, as I know by myself

the points that my reader desires to have elucidated, there is no danger of my embarrassing him with my learning, and I think that I may, therefore, attempt that in which my superiors have failed.

I must also observe, that the language of those who undertake a familiar explanation of the 2000 years' bondage is always too high-flown. They begin fair enough, but, the subject being necessarily of an intellectual nature, they soon forget themselves, and seem to lose all recollection of the capacities that they are addressing. Their well-meant labor is thus, as regards their main object, commonly thrown away, while I am tolerably secured against such an error. For, should I be seduced into a flight, it cannot last long. Not having talents for fine writing, I must soon descend again to homely language, and my humble readers have, therefore, a good guarantee that I can never rise much above their comprehension.

AN ATTEMPT TO EXPLAIN WHAT IS COMMONLY CALLED THE PHILOSOPHY OF ARISTOTLE AND BACON: ADDRESSED TO THOSE WHO CANNOT UNDERSTAND THE DESCRIPTIONS OF IT THAT ARE USUALLY GIVEN IN BOOKS.

DEFINITION OF LOGIC.

Logic is the art of reasoning, or of conducting an argument or inquiry according to regular rules, so as to arrive to the conclusion at which

we aim, in a scientifically progressive manner. Its object is, or ought to be, the discovery of truth, for, when it deviates from that, and looks only to victory, it degenerates into sophistry. It may also be defined as the cultivation of reason, for, though a man of an uncommonly clear head and luminous judgment may, without any knowledge whatsoever of logic, come to a sound conclusion, yet still, to say nothing about such qualifications being extremely rare, some assistance might be useful, just as an exquisitely natural fine ear may be further improved by an acquaintance with the rules of music. The utility of logic is beyond any reasonable doubt, and the only question that can arise is, whether it can be taught. Into that it would be premature to enter, because one object of what follows is, to put you in possession of the efforts that have been made for that purpose.

A COMMON MISNOMER EXPLAINED.

Before proceeding further, it is extremely important to explain what I venture to designate a misnomer, and that is calling Aristotle and Bacon's systems of logic "philosophy." With the learned this is no inconvenience, but I know that it is very embarrassing to others. You have, every one has, some idea of philosophy, and, if you think that it is the exposition or practice of some profound speculations or doctrines, your notion is perhaps substantially correct as that of the most eminent scholar.

Logic being the art of arranging our thoughts, and of conducting an investigation, cannot be philosophy, since it is only a general plan for explaining any kind of philosophy or science. You would laugh at him who should say that a pack of cards was whist, because you know that it is only the means of playing that game, just as a piano is not music, but an instrument for its performance. Aristotle may have written, and did actually write, philosophical treatises, but they should not be confounded with his logic, which was, at most, only a general grammar for the guidance of all philosophers. But this word philosophy, which is so often abused, has such charms with bookmen, that they are marvellously fond of it, and will lug it in on every possible occasion. Now that I have explained its misuse when treating of logic, you will be no longer puzzled to draw the distinction, for it is really of no consequence when known. But this little explanation must be very satisfactory to you, because the commentators on Aristotle's system will sometimes, when tired of repeating this word philosophy a thousand times, call it his logics, and then you think that they are speaking of two different things. I may here remark, just for amusement, that the pluralising of logic is no proof of judgment in the learned, for they would smile at hearing a *petit maître* talk of kind attentions, while their own logics are equally ridiculous.

I shall, however, be particular hereafter in distinguishing logic from philosophy, because that

is extremely necessary for our immediate purpose. It was the logic of Aristotle that kept the human faculties so long enslaved, and it was the better logic of Bacon that achieved their liberty. The philosophy of Aristotle did certainly great injury, because it was replete with grave errors, but then, according as those errors were discovered, the injury was lessening, whereas his logic, being a vicious system of general reasoning or argument, affords no prospect of relief except in the rejection of it altogether.

ON THE ORIGIN OF LOGIC.

Man, acquainted with writing, cannot be long advanced in study or science without thinking of logic. It is the natural result of a tolerable progress in civilisation. To say nothing of the vulgar multitude, the many blunders of the educated, and the erroneous conclusions to which they arrive in argument, would suggest the necessity of some fixed plan. A love of order is the first fruits of a departure from the savage state, and this goes on gradually till it at last extends to the regulation of our very thoughts. It is probable that rhetoric, which means forcible speaking, gives the first hint of logic. When one orator invariably leaves a deeper impression than others, and when it is found that this superiority does not altogether consist in his words or gestures, however elegant or appropriate, nor yet in strength of argument, it

is discovered that his power is attributable to a better arrangement of his topics, and a more connected detail, by which he rivets the attention of his hearers, and influences them to the end of his discourse. This, I say, might lead to logic, but, as that is only a surmise of my own, it matters little whether the inference be erroneous or true.

RISE AND PROGRESS OF ARISTOTLE'S LOGIC AND PHILOSOPHY.

As we know but little of ancient Egypt, where science first dawned, we may as well turn at once to Greece. It is there that we have the first record of logic. She had her poets, historians, philosophers, science scholars, painters, sculptors, architects, musicians, and a refined theatre, when the rest of the world was in a rude state. Accordingly we find that, at a very early period, several of her learned men put forth different systems of logic, but they all soon fell into the shade when Aristotle's appeared. He was a philosopher of a matchless grasp of mind and capacious intellect. Gifted with a rare sagacity, and a wonderful knowledge of the human heart, he penetrated as it were into futurity, and he furnished a system so artfully contrived that its mere developement is an exercise of skill. To use it as an art in itself. Each expounder plumes himself on the superiority of his illustrations, and what could be more gratifying to the pride, the vanity, and the

weakness of man than a system which left victory either undecided or disputable? Aristotle knew this well, when he gave his fatal present to posterity. It was worse than the fabled box of Pandora, for that contained hope, but our philosopher's pernicious gift provided no alleviation for its immeasurable evils. He wrote his ever-memorable work probably in 350, B. C., so that it is now about 2188 years' old, and yet its influence, despite of Bacon's acknowledged refutation, is still very considerable!

Aristotle's success was equal to his mighty genius. His philosophy, taken in the most comprehensive meaning, spread through Greece even before his death, notwithstanding the opposition of many eminent rivals, who felt themselves humiliated at being unceremoniously thrown aside. It was adopted by the Romans, who indeed hardly excelled in any thing but the art of war, and gigantic structures, though they borrowed the principles of architecture from Greece. After their colossal empire was dissolved, it began to influence the Christians, who had previously been rather inclined towards Plato, whose system of reasoning was of a more amiable and persuasive character. In the sixth century it appears to have lost ground, but, in the next, its operation is described as something like enchantment. The entire learned world was occupied in commentaries, glosses and dissertations on it, which served, however, to render it only the more dark and unintelligible! Translations of it were made into Arabic and

Latin—it was revered alike by christians, jews, mahometans or other sects, and it spread like a plague, as it proved to be, not only through Europe, but also into such parts of Asia and Africa where there were any men who pretended to learning. In some instances kings commanded that no other system should be read or taught, and, to show its extraordinary ascendancy, the power even of a pope was unavailing, as was proved by Innocent III. Having, through the solemn council of Lateran, prohibited the use of Aristotle's physics and metaphysics which are, properly speaking, his philosophy, it was soon found necessary to rescind the order. This will appear astonishing when we consider that the pope's mandate then, in matters of apparently less consequence, shook the greatest potentates on their thrones. But the truth is that, like Swift's big and little Endians in Lilliput, where eleven thousand persons cheerfully suffered death sooner than break their eggs at the smaller end, men were so bewitched by this philosopher's writings that they would deem it nothing less than martyrdom to die in its defence! Their cry was for Aristotle entire, as John Bull clamors for "the whole constitution and nothing but the constitution," though it is well for him that some *inconvenient* parts of it have been altered.

At length, after blood had been actually shed in disputing about Aristotle, the many important discoveries by a friar, Roger Bacon, together with those of the mariner's compass and America, proved some of the great philosopher's dogmas

to be false, and even his most ardent admirers were forced to admit, that he was not always infallible. The invention of printing having, by the cheapness of books, made reading accessible to thousands who were before debarred from it, there was a great increase of that portion of society deemed learned, and of course a new augmentation to diversity of opinions. In half a century after printing, Copernicus, a catholic priest, demonstrated the true theory of the earth and planetary system, and this helped much to shake the supremacy of Aristotle, as it proved incontestably that he was wrong in several of his assertions, and often presumptuous in his inferences. Luther, "the great champion of the Reformation," who had been at one time his supporter, now attacked him violently, and chiefly because he was pretty generally favoured by the catholic clergy, which was almost enough to determine his opposition. Many eminent catholics, though opposed to protestantism, joined in the Aristotelian war, and it now seemed easy to pull the great ruler from that throne which he had occupied for almost twenty centuries.

But who was to perform the daring feat? The throne could not be left vacant, and the difficulty was to find a substitute for the mighty despot. There must be philosophy, and, without some plan of reasoning, there can be none. But when those doughty assailants began to cool a little, and to look around them, they found that they were only a mob, who rail

against a bad government, though unable to devise a better. Aristotle's philosophy had been successfully attacked, because a good part of it was proved to be erroneous, but though many exposed, no one yet was able to remedy, the defects in his system of logic. Here we shall leave it for a moment, in order to note a few things that may be satisfactory to you hereafter.

Aristotle, whose Greek name is Aristoteles, is sometimes called the Stagirite, because he was born at Stagira on the borders of Macedonia, and the place was deemed honored, if not sacred, by his birth, which was in 384, B. C. After being many years under Plato, he set up a school of his own at Athens with great success. His followers were called Peripatetics, from a Greek word signifying to walk about, because he lectured and instructed his pupils as they moved to and fro in the Lycæum. His great work on logic is called the Organon, or Organum, which signifies a machine or instrument. It consists of fifteen distinct books or treatises—one on Categories, one on Interpretation, two on first Analytics, two on last Analytics, eight on Topics, and one on Sophisms. Some are supposed to be lost, but those mentioned now constitute his Organon or Logic, and there is usually prefixed to them an Introduction by Porphyry, a Platonic philosopher, and a noted enemy of the christians, who died A. D. 304. Aristotle opened his school in 335, B. C. being then 49 years' old, but he had private pupils

long before. Gillies says that he died in 323 at 63, but if he were born in 384, that would make him out only 61. On those points, the accounts do not agree exactly.

It is necessary that I make some remarks on the word *Organon*, as it will hereafter occur very often. For your greater convenience, I always spell it as in the Greek, with the termination *on*, though when Latinised, and preceded by the word *novum*, *new*, it requires *um*. Very eminent classical scholars do, however, frequently write *Novum Organon*, whether through inadvertence or choice I know not, and I have determined to use no other orthography except in quotations.

SHORT NOTICE OF BACON'S LOGIC.

The man who was destined to dethrone Aristotle at length appeared. This was Francis Bacon, Lord Verulam, and Viscount St. Albans, but most commonly called Lord Bacon. He was born in London, January 22nd 1560, and died at Highgate near that city, April 9th 1626, at the age of 66, and was buried at St. Albans.

Bacon's great logical work was called "*Novum Organum Scientiarum*," or a new method of studying the sciences. In that he demonstrates that Induction is the natural, and the only rational mode of analysis or investigation. This was the talisman that opened the door of Aristotle's mystic tabernacle, and discovered that its wonderful effects arose, as all

attempts at human mysteries must, from something like a show-box contrivance which, by pulling a string, exhibits many pleasing delusions when viewed through a glass *outside*.

This great work, first printed in 1620, was preceded by another on the advancement of the sciences or learning, which our author deemed necessary, in order to prepare the public mind for his *Organon*. It ought to have been called the *deficiencies* of science, for its chief object is to enumerate the defects and omissions in the various attempts of former writers and inquirers. Some of those chasms have been since supplied from the hints of Bacon, and it was certainly a most valuable present to science and the literary world.

Why his *Organon* or logic has not made so rapid a progress as it ought, after being published almost two centuries and a quarter, will be noticed in the proper place.

Bacon is at once the glory and disgrace of England! Enlightened to a degree that rarely falls to the lot of man, he was stained with some of the most revolting vices. His conduct towards his generous friend and benefactor, the unfortunate Essex, is an instance almost unparalleled in our annals of the blackest ingratitude—that crime for which nations provide no punishment, and which religion only can check. His taking of bribes from suitors, while he sat as chancellor, and which he was obliged to admit when found guilty, is a sickening instance of depravity in the highest

judge in a civilised country, and his general meanness to obtain his ends, and his fulsome adulation of the great, are absolutely disgusting. Those who wish for a specimen have only to read, in the second paragraph of his *Advancement of the Sciences*, addressed to James I., that part beginning with "For I am assured," and ending at "miracle," or down to "Hermes" or "philosopher," which is a tissue of the vilest sycophancy and falsehood. But the whole paragraph is, indeed, a model for the sorriest poetaster when inscribing his wretched doggerel to some person of rank. And this sample of reckless mendacity from him who opened the road to truth !

Infinitely worse characters than Bacon are every where found, but our indignation is particularly raised against him who could practise vice while he was illuminating the way to right reasoning. The parliament did their duty in condemning him, and perhaps James is excusable for remitting the sentence. If one who invented a telescope, by which men and animals could be distinctly seen in the moon, were to commit a serious crime, would not all nations petition to spare him who had made such a valuable contribution to science ? And yet Bacon's *Organon* is of much more importance to the world.

The frailties of this highly gifted man have, nevertheless, their use. They serve to lower our pride, to show us the value of that humility so energetically recommended by Christ, and to

correct a belief that had before very generally prevailed, that it was impossible for a master-mind and surpassing intellect to be superlatively mean, selfish and dishonest.

SKETCH OF ARISTOTLE'S LOGIC.

The basis of this system is the syllogism. This is a form of couching the substance of your argument or investigation into one short line or sentence—then corroborating or supporting it in another, and drawing your conclusion or proof in a third. Thus, suppose that you wound yourself up to such enthusiasm about virtue as to think that, in order to enforce it, all sins, as being transgressions of virtue, should be punished by death, you would condense the marrow of your doctrine into some such shape as this :—

1. Every sin deserves death,
2. Every unlawful wish is a sin,
3. Therefore every unlawful wish deserves death.

These are usually named, the major, minor and conclusion, but there are great differences with respect to the two first lines. Sometimes the first is called the premises, and sometimes the *first* premiss, and the next the second premiss. The first is sometimes called the proposition or subject, or affirmative, and the next the predicate, and sometimes the middle term, but, in analysing a syllogism, there is a middle term, and a predicate too, in each of the lines ! Often the minor is first, and the major next, but, though

some of those distinctions are mere varieties of name, just as we say house or mansion indifferently, others are of essential consequence, for, according as the syllogism is constructed, the minor may be actually first, and the major next, and so of other differences. I merely make those remarks because I know that you are puzzled when you read any account about syllogisms, and you often think the printer has made some mistake, or transposed the names of the different lines.

After having composed your syllogism, you proceed to explain and enforce its truth in detail, but, as you go on, a necessity for new syllogisms will arise. For every new point or assertion must have that form at least implied—that is, it must be reducible into that shape, though you need not parade it in separate lines like blank verse. In this way you arrive, step by step, at the end of your investigation or inquiry, but, if you have an adversary to combat, the labor is considerably increased. For he may deny your premises, which means that he denies the justice or legitimacy of your syllogistic affirmations, and, as there are regular rules for the construction of all kinds of syllogisms, you must rectify yours if his objections be well-founded, or otherwise you will be deemed to have been defeated, and the victory will be awarded to him. But, if you be both equally expert tacticians in this logic, you may go on till each is tired, and then the contest ends like a drawn battle.

To one who has not studied this system, nothing appears so absurd, as an argument, than the syllogism. You see two dogmatical assertions, which nobody is bound to believe, and then a conclusion drawn, with all the arrogance of one who seems to think that his word is a law not to be questioned. It appears, however, to be very simple and easy, but, take care! it is anything but simple. Aristotle's plan had three *figures* or kinds of syllogisms, to which the celebrated Galen, in about five hundred years after, added a fourth, to supply, as he said, an omission of the great founder. Each figure has 64 *modes*, or forms of construction, making in all 256. It is true that our modern logicians generally reject Galen's figure, and seldom use more than about 12 of each of the three others, but even that would make 36, and to master which completely would, I assure you, require more study than you could well believe. I forbear entering into any review of these, because that is not my province, and besides you must recollect that my *bargain* with you is of quite a different nature. Another reason is that, while it would require a volume in itself, it would be incomprehensible unless you laid yourself down to a most serious and irksome study. I shall only notice two principal distinctions in syllogisms—that they are either affirmative or negative. Of the first you have already an example—the other is used to deny or refute something that you think is untenable, and it must have the word *not*, as thus :—

1. Every thing virtuous is praise-worthy,
2. Some pleasures are not praise-worthy,
3. Therefore some pleasures are not virtuous.

Or thus :—

1. Whatever is not praise-worthy is not virtuous,
2. Some pleasures are not praise-worthy,
3. Therefore some pleasures are not virtuous.

But a kind of negative syllogism may be so constructed as to dispense with *not*, as in this example :—

1. No work of God is bad,
2. The natural passions and appetites of men are the work of God,
3. Therefore none of them is bad.

This is, for our purpose, enough on ordinary syllogisms, which you perceive have only three sentences or propositions, and it is indeed generally taken that, if they require more, they are vitiated. But Aristotle, who did not like to do things by halves, foreseeing that cases would occur requiring more, has obligingly furnished other kinds of syllogisms, where half a dozen sentences may be used, and they are generally classed under the head of *compound* syllogisms. Of these, the most remarkable are the Prosylogism and Sorites, and I give a description and example of each from Dr. Watts :—

“A prosyllogism is when two or more syllogisms are so connected together, that the conclusion of the former is the major or minor of the following: as, blood cannot think, but the soul of man thinks; therefore the soul of man

is not blood : but the soul of a brute is his blood, according to Scripture ; therefore the soul of a man is different from the soul of a brute."

Nothing saves this example from being downright tomfoolery but "according to Scripture," because we admit it to be of divine authority. Even with that help, it appears to be a very meager kind of argument to prove the immortality of the soul, for that is evidently its drift. The doctrine of Plato, though a pagan, is more convincing, and we need not wonder that young men, who learn logic by such illustrations, are much worse reasoners than if they had never known any thing of it whatsoever.

"A Sorites is when several middle terms are chosen to connect one another successively in several propositions, till the last proposition connects its predicate with the first subject. Thus, all men of revenge have their souls often uneasy ; uneasy souls are a plague to themselves ; now to be one's own plague is folly in the extreme : therefore all men of revenge are extreme fools."

You have now, I should think, a notion of the part that the syllogism plays in argument, for I do not look to or expect more. With this Aristotle took extraordinary pains, and he distinctly claims the invention, that is, as to theory and doctrine, and a regular system for its application or use. The syllogism was always known, as I shall show in another place, but he was the first who anatomised it, and who made

it the principal material of the most gorgeous structure of logic that was ever erected. Yet the syllogism was the subject of his "Analytics" only, and, if you look back to the list, you will find two works before them on "Categories" and on "Interpretation," concerning which, and the other books in rotation, we shall say a few words.

Categories.

Though I thought it right to begin with the syllogism, as being the actual foundation and main support of Aristotle's logic, he, or perhaps whoever arranged his *Organon*, commences with the categories, as a preliminary step in the art of reasoning. Their object is to divide or class, under ten heads, whatsoever can come within human apprehension. Anything like an intelligible explanation would require a great deal of writing, and I shall only say that, like chemistry, they reduce what is whole into its component parts. You may, however, have some idea of their use from this description—"As every soldier belongs to some company, and every company to some regiment; in like manner every thing that can be the object of human thought, has its place in one or other of the ten categories; and, by dividing and subdividing properly the several categories, all the notions that enter into the human mind may be mustered in rank and file, like an army in the day of battle."

These categories are at once the admiration and the torment of logicians. They must ever be admired as a prodigious effort of genius, but they are exceedingly difficult of management. Several attempts have been made to render them more tractable, but without much success. Locke reduced them to three, but, in doing that, he left the whole thing defective, nor have the more recent attempts at general divisions been much more successful. Every one admits, that a regular distribution of things under proper classes or heads, is a great help both to memory and judgment, but Aristotle's project was too vast to be embraced by man—the human powers are unequal to so bold a flight into the regions of methodical delineation.

Now whether you understand all this or not is of little consequence at present. You can, at least, perceive by it that Aristotle's genius was of immense extent, and it is my duty to impress that on your mind. We rarely leave one extreme without going into another. Those who fancy that they have caught the spirit of Bacon's logic think that, unless by decrying the abilities of his great predecessor, they can never sufficiently show their sincerity and conviction, but that only betrays their ignorance, and I wish to put you on your guard against such an exposure.

Interpretation or Definition.

The work on "Interpretation" is a necessary preparation for the study of any logical system,

and I venture to say that it ought to be placed first. It gives instructions for the proper understanding of every thing that enters into the composition of speech, and that is of great importance to right reasoning. Hence it is unavoidably a kind of philosophical grammar, and it actually begins by examining what is a noun or a verb—an affirmative or negation, and even speech itself. It embraces a variety of views and definitions, all tending to the correct use of words, and at length proceeds to propositions, future contingencies, and various dissertations that make up, as it were, the science of language. The writers on logic borrow largely from this work when treating of judgment and propositions.

Topics.

After the Analytics come the “Topics.” Of this work, it is very difficult to explain the nature to a non-logician, because the design appears to be a further extension, development, or dissection, of the categories, which you have already seen are not easily comprehended. Aristotle’s *method* here is not generally approved of, but, though the logicians do not follow it, they draw their topics, or heads of argument, from this work, which is a rich storehouse of all possible distinctions. All that can be said on one side or other of every question is collected, as it were, into one grand inexhaustible arsenal, “from which all future combatants might be furnished with arms offen-

sive and defensive in every cause, so as to leave no room to future generations to invent any thing new." What a creative genius does Aristotle constantly exhibit! Need we wonder that his bitterest opponents are forced to admire his wonderful ingenuity?

The Topics conclude with a code of laws for managing syllogistic disputations, on the part of both assailant and defendant—"from which it is evident that Aristotle trained his disciples to contend, not merely for truth, but for victory."

Sophisms.

We are now arrived at the "Sophisms"—the last part of this famous Organon or logical machine. This is what has thrown the greatest shade on Aristotle's honesty of intention, and which has tended most to shake his stately fabric. Not content with a labyrinth of *simple* syllogisms, sufficiently perplexing to both parties—not content with adding to this a maze of complex, conjunctive, disjunctive, relative, connective, categorical, and compound syllogisms—not content with laying down an insidious code for the management of those syllogisms, by which the disputants might, like two equally skilful fencers, tilt at one another with impunity—not content, I say, with all those allurements, he gives his sophisms as the last or finishing step to deception. It is possible, though barely possible, that he might have conceived a syllogistic scrutiny to be a good means of detecting

error, but it is very hard indeed to believe, that a man of his penetrating intellect could write his sophisms with a view to aid in the discovery of truth. They are truly a master-piece of imposing ingenuity. He introduces them as *fallacies*, which of course every honest reasoner would be glad to detect, but, in the end, they prove to be weapons for both attack and defence, and by which truth may be rendered unavailing. It is from this that we have our word SOPHISTRY, which is explained in the dictionaries "*fallacious reasoning*"—a very remarkable meaning when we consider, that the inventor proffered it as a protection against fallacy!

The friends of Aristotle, and they are still very numerous, have strained hard to defend his sophisms, but they appear to have a bad cause in hands. For, if they maintain his honesty of intention, it is at the expense of his abilities, which they will not allow to be called in question. One who is anxiously impartial says, "It was probably Aristotle's aim, to reduce all the possible variety of sophisms, as he had attempted to do of just syllogisms, to certain definite species: but he seems to be sensible that he had fallen short in this last attempt." Now it is not easy to discover where he seems "*sensible*" of any failure. For after having, with his usual confidence, enumerated the various kinds of sophisms, he goes on with *new* instructions in the art of managing syllogistic disputes, and his peroration or conclusion is a specimen of anything but diffidence.

But it is, nevertheless, possible, that the analysis of such a prodigious ramification of syllogistic contingencies, and all the consequent justifications, might have been too much for even the gigantic powers of an Aristotle—why then should he, as a man of integrity, promulgate a system which was manifestly pernicious by its imperfection? I fear that we must agree with a commentator who says, “But how is it possible that a man of his capacity could long remain ignorant, how insufficient a syllogism is for discovering any latent truth? He certainly intended his system of logics, chiefly, if not solely, for disputation: and if such was his purpose, he has been wonderfully successful; for nothing can be better contrived than that system, for wrangling and disputing without end. He indeed in a manner, professes this to be his aim in his work *De Sophisticis elenchis*.” Observe well that this work is his book on Sophisms.

You will now be surprised to learn, while reading of “the human mind being kept in fetters by Aristotle for 2000 years,” that the real *value* of his sophisms was known even in his lifetime, as will appear by the following anecdote of Alexander the Great, who was educated by him, and for whom he always had the highest respect and the warmest affection. Some persons having travelled from Macedon all the way to Persia with complaints against Antipater, Alexander observed, that they would not have made so long a journey had they received no

injury. Cassander, son of Antipater, replying, that their long journey was an argument against them, as trusting that witnesses would not be brought from such a distance to give evidence of their calumny, Alexander, smiling, said, "Your argument is one of Aristotle's sophisms, which will serve either side equally well." This shows that he at least was not gulled, though instructed from the very lips of the great logician himself. But the enlightened are always few when error is popular.

Why do I dwell so much on these sophisms? It is because they cannot be displaced without ruining the whole system, though they show how its chief support, the syllogism, might be effectively vitiated! Here Aristotle, like some over-eager witnesses on a trial, proved too much, though his followers were not bright enough to perceive the blunder. Váuban, after demonstrating how the strongest places could be taken, regretted that he had done so much for their attack, and thought to counteract the effect by showing how they could be rendered impregnable, but he found that he had foiled himself already by the efficiency of his plans for siege. Aristotle after constructing, with immense labor, a huge fortress of syllogisms, taught how to demolish it, or, in other words, to undermine his own entire system of logic! But, as this is a matter of great importance, we must examine it plainly, and lay aside all figurative language.

The Aristotelians say, that the sophisms serve only to prove the weakness, or defective con-

struction, of a syllogism. If we grant that we must yield, because nothing surely is more reasonable than to have means of meeting a cunning or dishonest opponent, and of preventing him from baffling truth by an artful, and deceptiously contrived, syllogism. But we cannot admit such an explanation, because the sophisms, while they detect either designed or accidental misconstruction, furnish the defender of falsehood with new and endless, yes, ENDLESS resources for opposing truth, and show the folly of attempting to reason under a system mainly supported by such a flexible thing as the syllogism.

It were well for Aristotle's fame if he had locked his sophisms up in his own breast. For, though they kept the learned world long contending, they ultimately overthrew his system by proving the poverty of its fabrication. He did not calculate badly, however, on the weakness of mankind, and the slow progress of reason and judgment, as the duration of his power shows. But had he stopped at the *Topics*, and heaven knows there would then have been quite enough about syllogisms, his reign might probably have been further extended. The inefficiency of the syllogism might be seen, as indeed it actually was, before Bacon, but the sophisms exposed its insidious nature, and men the more gladly embraced the new logic, which delivered them from a system of unmanly stratagem, in direct hostility to all notions of equity.

Aristotelian mania fairly described.

This glance at the books comprising the whole of Aristotle's Organon or logic, though not exactly belonging to an ordinary view, will, nevertheless, forward our main object, and I doubt not that it has afforded you some assistance. I shall now make some remarks on that Aristotelian mania which is represented by our writers in such astounding terms. Doubtless you think, as I once thought, that nations were all convulsed, and as in a state of warfare, in contending about Aristotle, but they were no such thing, for they remained as quiet as at present. Those "terrible" contests, of which we have heard so much, were confined to the learned, and the people took little or no part in them, for this very plain reason, that they did not understand what the *combatants* were about. Besides you must keep in mind this important fact, that the learned were then very limited, for reading, now so common, was deemed a high accomplishment previous to printing, and consequently the numbers engaged in those strifes must have been small. But they appear formidable when aided by glowing language, just as Homer's Catalogue of the Ships makes the Grecian forces seem innumerable, because he takes care not to mention the amount. Even now, when almost every peasant can read, there are important questions agitating the scientific world, of which very few have heard, as for instance the parallax of the fixed stars.

You might go into every genteel company, and not find one present who knows any thing at all of the matter, or yet what parallax means.

But we must admit, that what the learned are doing is of great consequence to nations. They are the instructors of the people, and whatever errors they make are disseminated throughout. No one ever heard of a country where the lower orders were better informed than the higher. You must not think, however, that the general state of enlightenment is in proportion to that of the upper ranks, for any gross error promulgated amongst the people is, unfortunately, very hard to eradicate afterwards, and it remains firmly engrafted on them long after being exploded by men of discernment and education. I need now only instance witchcraft, ghosts and fortune-telling, because I shall have occasion to touch on the subject again.

Further exposition of the Syllogism.

It is right, in justice to the world, that you should know that there was always great opposition to Aristotle, and that he did not impose quite so extensively as our flaming accounts might lead you to think. There were always, thank God ! some sensible men in the world who saw through the cheats of mystery, though they sometimes wanted either ability or influence to stem the torrent of blind credulity. In all ages, since Aristotle wrote, he has been ridiculed, lampooned, satirised, or more seriously

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attacked, which shows at least that there were never wanting men who saw the real tendency of his system, and who would not debase their understanding by worshipping his phantom of logic. I may mention Lucian, a witty Grecian author, who died A.D. 180. In a humorous account of a supposed sale of *slaves*, or old philosophers, he introduces Chrysippus, a follower of Aristotle, to be sold, and Mercury acts as auctioneer. Chrysippus, after the buyer has asked him many questions which we shall pass, says,

You deride me, good Sir, but take care that I do not shoot you with an indefinite syllogism.

Buyer. And what evil is to be feared from that weapon?

Chrys. Doubt, and silence, and distraction of mind. But what is greatest I can, if I wish, instantly make you a stone.

Buyer. How! a stone?

Chrys. Thus. Is a stone a body?

Buyer. Yes.

Chrys. Why then, is not an animal a body?

Buyer. Yes.

Chrys. Are you an animal?

Buyer. I think so.

Chrys. Ergo, you are a stone being a body.

Buyer. Not at all. But liberate me, I pray you, and make me a man again.

Chrys. It is not difficult—be then a man once more. Tell me, is every body an animal?

Buyer. No.

Chrys. What! is a stone an animal?

Buyer. No.

Chrys. But are you a body ?

Buyer. Yes.

Chrys. Being a body then are you an animal ?

Buyer. Yes.

Chrys. Therefore you are not a stone, being an animal.

Buyer. You have done well since already my legs, like those of Niobe, were chilled and stony ! But I will, however, buy you.

It is curious to observe that Lucian, here, seems to give the *merit* of the syllogism to Chrysippus, though he lived a century after Aristotle, who claims the invention. Mercury next calls the great Peripatetic himself, and then *puffs* him off as being the wisest philosopher in the universe, who knows, amongst many other wonderful things, how long a gnat lives, to what depth the sea is rendered pellucid by the sun, what sort is the soul of oysters, that man is a risible animal, but that an ass is not, nor fit for building or sailing. In consequence of so many *valuable* qualifications, he is knocked down at a higher price than Chrysippus brought. Yet Lucian is particularly severe upon him, for he ridicules, through Chrysippus, his syllogistic logic, and derides his philosophy by a ludicrous exhibition of himself. But, though the raillery is certainly overstrained, it shows the unfitness of the syllogism for discovering truth. Indeed it exposes its pliancy, and its *accommodating* nature, so plainly that I think you will derive some information by seeing the thing in regular syllogistic form :—

1. Every body is an animal,
2. Every man is a body,
3. Therefore every man is an animal.

Here man is proved to be an animal, and then our syllogist goes on:—

1. Every stone is a body,
2. Every man is a body,
3. Therefore every man is a stone.

Man is now proved to be a stone, but, having before proved that he is an animal, he can be easily restored to animation thus:—

1. A stone is not an animal,
2. Man is an animal,
3. Therefore man is not a stone.

The great Locke, in his *Human Understanding*, b. 3, ch. 10, sec. 8, approves of Lucian's satire, yet our peripatetics will scout it as a broad caricature of the syllogism, but, if they lay aside their prejudices, they will find that it is not a very gross perversion. We admit that the syllogism is useful, and that it is necessary, *in its proper place*, and they ought to concede that a theory, mainly depending on it for support, is better calculated for disputation than for the detection of error, or the verification of any asserted truth.

Lucian again takes occasion to attack the syllogism in his "Philosophers revived," where he represents them in a great rage, and bringing himself to trial, for having sold them as slaves. But there were hundreds of much abler opponents, who literally shook both the logic and philosophy of Aristotle to pieces, and that too

at the risk of suffering, for some of them were severely punished by their respective sovereigns for daring to question his infallibility ! Do not be surprised, however, that they all failed in overthrowing him. I told you before that there must be some kind of logic, and, as none of them offered a better substitute for Aristotle's, it was in vain that they exposed its weakness and futility. Were it possible for a man to demonstrate, and that so clearly as to convince every one, that our present system of astronomy was erroneous, we would still stick to it, unless he furnished a more rational one in its stead. A score or two of learned men have attacked Newton's Attraction and Repulsion, but none of them have devised a superior scheme, and so they all lie unheeded. We are not generally satisfied with our theory of the tides, but the moon will retain her influence till some better agent for the ebb and flow of the sea shall be discovered. So it was with Aristotle's logic. Long and long ago was its ineptitude exposed, but no one could undertake to fill its place. The glory of that achievement was reserved for Lord Bacon.

You are by this time, I flatter myself, beginning to comprehend the "2000 years of mental slavery," and also to understand something about the unfitness of Aristotle's logic for unravelling error or discovering truth. Before you can, however, have that clear conception at which I aim, there are some other explanations necessary concerning his system, but these I reserve, because they will come in the more

instructively when treating of his great and successful opponent.

SKETCH OF BACON'S LOGIC.

This is much more easily explained and comprehended than the old system. Its basis is Induction, which is thus described in the Library of Useful Knowledge, No. 10, in an article specially devoted to a "familiar" exemplification of the Baconian logic:—

"The grand principle which characterizes this great work [Bacon's Organon], and by the proper use of which its author proposes the advancement of all kinds of knowledge, is the principle of *Induction*, which means, literally, *a bringing in*; for the plan it unfolds is that of investigating nature, and enquiring after truth, not by reasoning upon mere conjectures about nature's laws and properties, as philosophers had been too much accustomed to do before, but by *bringing together*, carefully, and patiently, a variety of particular facts and instances; viewing these in all possible lights; and drawing, from a comparison of the whole, some general principle or truth that applies to all."

From this, which you would do well to get off by heart, you will already perceive that there is a great difference between the new and old logic. The first is the logic of nature, while the other is that of artifice—it is the logic of truth, while the other is that of stratagem and dexterity. It disclaims all skill, except what

legitimately belongs to the art of reasoning, while the other does not scruple to put an opponent down by cunning or legerdemain. We may indeed emphatically say, that one is really the art of reasoning, and the other that of ignoble disputation.

Induction teaches that, when you set about any discussion, investigation, inquiry or argument, you must collect all the information that you can on the subject, and, in doing this, you must spare neither time nor trouble. You must then examine each fact deliberately, compare one with another, and observe the agreements or disagreements. Then you must review them all in relation to how they respectively support each other, reject those that do not appear to be sufficiently authenticated, or which present manifest contradictions, and, having thus laid as it were a foundation of *general* materials for your argument, you proceed to a more *particular* investigation, and at length draw from the whole, strengthened by your own observations and reasoning, the conclusion which is your object to demonstrate. Some say that you proceed from particulars to generals, but that does not seem so plain to ordinary understandings. You certainly come at last to a *general* conclusion, and, though my explanation may be objectionable, it cannot I think lead you astray.

The process is the same on abstract matters, or such as offer no "facts or instances," such as:—

Whether the soul leaves the body instantly on the last sigh, or remains for a short time after.

Whether beasts think at all, or whether a horse, when he stands still for an hour in the street, is, in respect to any thought, only like ourselves when asleep and not dreaming.

Whether an oak tree has any life which it feels and enjoys, or whether it is, as to that respect, only like a stone or a piece of metal.

Whether fishes and insects which never utter any cry feel as much pain, when wounded, as animals having the power of crying—in other words, whether such power of crying is or is not some alleviation of pain, and whether there is any compensation, in a lesser sensibility, to silent creatures.

Such questions admit of only conjectural or presumable conclusions, because, as they cannot be supported by facts or instances, we know that we can never arrive at any *positive* proof. Yet they are, notwithstanding, applicable to induction. What though we can produce no facts, many learned men have written much on them, and, by collecting, arranging and comparing what they have said, we might make out an instructive investigation. For you must not think, like the ignorant multitude, that such discussions are quite useless, since they often incidently lead to important and unlooked-for discoveries or elucidations. There are other questions apparently similar, and yet they can hardly be called abstract, such as, Whether is the moon inhabited. We do certainly know beforehand that, till glasses be invented sufficiently powerful for seeing living creatures there, the

question can never be *positively* decided, yet still we are by no means destitute of facts to aid us towards a reasonable decision. We know that the moon has days and nights, and changes of seasons—that she has hills, mountains, vallies, plains, and other diversities similiar to our earth—that she is enlightened by the sun, and that our earth gives her thirteen times more light than she gives us—these, and many other things that I omit, must be assumed as facts because they have been satisfactorily demonstrated, and we may, therefore, very fairly conclude that such a body, having all the requisites for habitation, was not made solely and entirely to give us a weak and partial substitute in the sun's absence. At the same time, while it is quite rational to conclude that she is inhabited, we must treat contrary opinions with deference. Some maintain that, though she might have been once habitable, she is now bound up in such a terrible frost as to be incapable of sustaining animal life. It is certain that when her influence here is the greatest, that is, when she is in the full, the nights are always remarkably cool, even in the warmest weather, but, as I am far from entering into any discussion, I mention this only to show you, that there can be no true logic without temper, patience, moderation, and the dismissal of all prejudices.

Grand difference between the New and Old Logic.

Before we go further, it is necessary to glance at this slightly. The most striking difference is,

that, in the new or Baconian system, you begin at the bottom and work upwards to the top, whereas, in the old or Aristotelian, they began at the top and worked downwards to the bottom. I think you ought now to comprehend what that means. Formerly they disdained, as it were, common labor in any exertion of the mental faculties, and therefore, in a disquisition or argument, they began by discussing the most intricate parts of the subject, and frequently wandered into topics that had nothing to do with it at all, which brought them into frivolous disputes about words, and nice distinctions of no consequence whatsoever. In this way, and in arranging their syllogisms, they lost so much time that they hardly ever dived into their subject—inso-much that one might say, that they began and finished their inquiry at the top, and did *not* work downwards. Hence their conclusions were commonly arrogant or ill-founded.

Directly contrary is the new system. After a proper preparation, which shall be hereafter explained, you begin, by the patient and laborious method of induction, to clear your way to the top, where you arrive step by step, and thus gradually complete your inquiry. Does not this appear to be the more natural plan, and is not there a strong probability that your conclusion will be the more rational?

In the old system, they set out with presumption and cock-crowing, for their object was victory—in the new, modesty is, or ought to be, the leading feature, otherwise induction is dis-

torted, because its object is the discovery of truth, and it inculcates that you should rather be defeated than victorious when defeat convinces you of having been in error.

The old system allows of stratagems and *hitches* without end—the new permits no advantages to be taken over an adversary, when it is plain that he erred merely through inadvertence.

A prevailing error.

I have before remarked, that we seldom leave one extreme without running into another. Some persons, and they are more numerous than could be wished, hearing Aristotle cried down, and being relieved from his cumbrous theory of syllogisms, and impressed with the simple nature of induction, think that they are emancipated from all the trammels of logical rules, and that they are now free to conduct an argument as they please. This is a great mistake, and it has produced too many pretended logicians. Every art must have its rules, and, as reasoning is an art, we cannot dispense with certain precepts. Those laid down by Aristotle can never be wholly thrown aside, and, though his syllogistic system is justly replaced by a better, it does not follow that he should be entirely rejected. He traced the rudiments of logic with such a comprehensive hand that, however they may be modified or improved, they will always furnish materials for the construction of any other system. Bacon

himself leaves a great part of his system undisturbed—inso much that the *Novum Organon* is but a review of its main defects, with the remedies proposed for their rectification.

Remarks on the Elements of Logic.

Every study must begin with the humbler or rudimental parts. In music we commence with the simple notes—in grammar with the parts of speech, or in reading with the alphabet, and so logic has likewise its progressive steps. What seems first necessary is Definition. This teaches that you affix a settled meaning to your words, and so use them consistently throughout your discourse or investigation. But this applies only to such words as are of obvious importance in your inquiry, and not to those that cannot possibly be misunderstood or mistaken. Suppose that you were writing or speaking on an ordinary subject, as the impolicy and miseries of war, you might use the words *perception*, *conception* and *apprehension*, indiscriminately, because they would not affect the drift of your inquiry, but, if on a metaphysical dissertation on our mental faculties, those words become of great consequence, and you must then be precise in your choice and meaning. Ordinarily you may say the perception, the conception, or the apprehension, of such a thing, but now you can give no latitude or scope to the sense that you intend to convey. Perception may be “the consciousness of an object when present,” and

conception "the forming an idea of the object whether present or absent," while apprehension may be found too loose and vague for any specific application. Here then you must define clearly what you mean by the word you adopt, whether it be perception or conception, and stick to that given meaning *invariably* throughout, or, if you have occasion for both, you must assign them their separate and respective functions. Your opponent has a right to call upon you for an exact definition of any leading word that you use, but, when you give that satisfactorily as regards your own meaning, he is not NOW allowed to question that further, though it may be quite at variance with his own notions. This is a striking feature in the new logic, and which it may be acceptable to explain more particularly.

Formerly, they were so fascinated with hair-splitting, and nice dissections, that every discussion was almost sure to involve a grammatical contest, and the parties appeared more like pedagogues, squabbling about trifling distinctions, than scientific men seriously engaged in coming at truth. It mattered not how clearly one explained certain words or terms—the other might dispute the propriety of his definitions, and thus, in such silly altercations, they wasted a great deal of time, wandered away from the main object of inquiry, and not unfrequently lost sight of it altogether. They required words to be defined which were incapable of a better definition than what the

words themselves implied. Aristotle defined Motion, "An act of a being in power, so far forth as it is in power," which was, as a sensible writer observes, "unintelligible jargon," and some moderns, still infected by the old school, attempt an amendment by calling it "change of situation." Now one is fully as impertinent and obtrusive as the other. Every one knows what motion is. A stone during its flight when cast by the hand or a sling, or rolling down a precipice, or falling from a high tower, is in motion. So is a man while walking or running, a wheel turning round, a ship sailing, water running, or any thing in—what can we say better after all than in motion? Some wretched bungler might substitute *movement*, but that would not be half so good as to call it the opposite of rest. True logic does not require, nay it prohibits, any attempt to define, by additional words, what is already sufficiently clear, for it generally follows that some of those explanatory words must be defined, and then comes that notable absurdity, definitions of definitions! Would not *power* itself seem to require here a definition?

You must take notice that dictionaries will not serve for definitions. The meanings there given are of too general a character, and their plan requires that every thing, however well known, must be explained. Thus they give Motion, "the act of movement," which is very correct, though it may not answer the logician. I have somewhat enlarged on this in order to convince you, that Definition is an essential

point in the art of reasoning, and I must now inform you that it is of great extent, and that it embraces numerous considerations on which this limited essay will not allow me to touch. From the slight view taken you may perceive, however, that its difficulties have been greatly smoothed by the light derived from Lord Bacon's *Organon*, and that the straw-cavilling, and the unprofitable minute subdivisions, of Aristotle, no longer encumber our road to this important department of logic.

Ideas are the next branch. This contains rules for the proper classification and arrangement of all the operations of the mind. By this you learn the relation of one thing to another—the necessity of a just separation when that is necessary for clearness, and in short of avoiding all those incongruous associations into which men, not accustomed to reason methodically, are usually betrayed. This requires such profound study, and it necessarily extends to such a variety of heads or particular kinds of ideas, that it would be useless to attempt a description unless in a treatise devoted to the purpose. I shall therefore only remark that it is by far the most toilsome part of logic, though Lord Bacon has done much to render it less thorny and intricate. But I will not dismiss it, however, without observing, that I think it ought to be placed *after* Definition, and not before, as is usually the case. I am afraid that this arises from that blind veneration of Aristotle, which has made men revere his very errors, and see

danger in a departure even from his routine. Because he, though probably his collators, placed the Categories before the Interpretation, so our modern writers on logic must needs follow the same order, without daring to question its propriety. True they give this reason, that definition is only a further help to the comprehension of ideas, but I will venture to call it the hornbook of logic, and, if that be admitted, it should undoubtedly be first. It seems to be naturally the preliminary step to logic, and, as it is not very hard to be understood, it would be a good preparation for the much more difficult part, that of ideas. No study is so dry or so vapid as logic. In pursuing Latin, Greek, algebra, mathematics, the idlest and dullest youth knows that, if he persevere, he will learn them, but, in the dreary desert of logic, the most attentive and diligent see but little reward for their labor, and not more than one in some hundreds stick to it except through compulsion. It behoves us then to do all we can to make the way easy, and, by beginning with definition, the pupil might be the more readily encouraged to proceed farther. I am sorry to say that, notwithstanding all our pretended improvements, we have yet no work on logic that offers any inducement to even a sedate and settled man for its study. The attempts to blend the plainness of Bacon with the gaudiness of Aristotle, have considerably increased our difficulties, and the worst of it is, that our writers lean, I might almost say, invariably more to Aristotle than Bacon.

It may appear impudent, and I believe it is, for me to dictate to professed logicians in their orders or arrangements, but, as I do not offer my suggestions in any spirit of petulancy, I do not think that an apology is necessary.

You are to note, that what I have called "ideas" might as well have another name, and I use that in deference to custom only. After Definition a certain preparation for reasoning is necessary, and indeed the old plan is intolerably tedious and farcically abstruse. It tends more to darken than to illuminate the way, and requires a complete change altogether. A valuable compendium might be compiled from Bacon's initiatory instructions, but, as we have not that, I shall go on and observe, that the "ideas" take in such a large portion of logical elements, and furnish such a variety of the *tools* required, that little more remains then but to go to work. Yet our teachers still make us proceed to the study of syllogisms, though that vague process has been justly superseded by the more rational and efficient operation of induction. The reason that they give is, that the syllogism cannot be dispensed with, and that it must, therefore, continue to be an indispensable constituent of logic. It is true that we all syllogise unavoidably. For, when we make an assertion, and back it by a *for* or *because*, and support it still further by a *therefore* or *for which reason*, we syllogise. As thus :—

I know that Mr. Dee was at home this morning at ten o'clock, *for* though his servant denied

him, my messenger, who knows his voice well, heard him speaking at the time in the parlour, and *therefore* (or *for which reason*) I am certain he was then at home.

Now who denies that we do, and must syllogise, in spite of ourselves? No one I believe. But we deny that it is an argument for making the art of reasoning to depend on syllogisms. Wood or iron is found to be the best material for doors, but is that a reason that we should build our houses with either one or the other in preference to marble, stone or bricks? The syllogism may be convenient, but it is not fit for the construction of a logical edifice. If a syllogism be true, it is nothing more than a truism, *i. e.* a thing that no one denies, like two and two making four, and it consequently neither strengthens nor weakens an argument, but, if it be false, it can be shattered to pieces by induction which admits of no quibbling. The old way was, if a syllogism were contested, to require it to be refuted by another, but now we attack it by induction, and regularly examine its materials. If opposed to one who argues on the syllogistic plan, we are not bound to produce syllogisms in reply—we oppose him by induction, and, if he object to that, we may be quite certain that he is not worth contending with, and we may fairly decline any further argument. No false syllogism can resist the inductive process of sifting particulars. The last one would not stand a moment before it, because the assertor

gives us, in the first place, only secondary evidence, that of his messenger, but, supposing that he went himself instead, we should require some better proof than his own mere assertion, of there being no possibility of his mistaking the sound of Mr. Dee's voice. Again—supposing that he actually saw him in the parlour, why then we must, in common courtesy, admit his assertion, but then there will be no occasion for the *therefore*, or conclusion. Indeed the very best constructed syllogisms are only supererogations as to their conclusions. For any one can see that the conclusion is not a proof elicited in consequence of the propositions, as they already contain it in themselves, and therefore the civilest thing that can be said of the conclusion is, that it is superfluous. But, lest it may be thought that I am now saying too much from myself, I shall give a quotation from Lord Kaimes' *Progress of Reason* :—

“ Aristotle has done hurt to the reasoning faculty by drawing it out of its natural course into devious paths. His artificial mode of reasoning is no less superficial than intricate. I say superficial ; for in none of his logical works, is a single truth attempted to be proved by syllogism that requires a proof: the propositions he undertakes to prove by syllogism, are all of them self-evident. Take for instance the following proposition, That man has a power of self-motion. To prove this, he assumes the following axiom, upon which indeed every one of his syllogisms are founded, viz. That

whatever is true of a number of particulars joined together, holds true of every one separately ; which is thus expressed in logical terms, Whatever is true of the genus, holds true of every species. Founding upon that axiom, he reasons thus : ‘All animals have a power of self-motion : man is an animal : *ergo*, man has a power of self-motion ?’ Now if all animals have a power of self-motion, it requires no argument to prove, that man, an animal, has that power : and therefore, what he gives as a conclusion or consequence, is not really so ; it is not *inferred* from the fundamental proposition, but is *included* in it. At the same time, the self-motive power of man, is a fact that cannot be known but from experience. I add, that the self-motive power of man, is more clearly ascertained by experience than that of any other animal ; and in attempting to prove man to be a self-motive animal, is it not absurd, to found the argument on a proposition less certain than that undertaken to be demonstrated ? What is here observed, will be found applicable to the bulk, if not the whole, of his syllogisms.”

I beg you to read this quotation attentively, for I confidently assure you that, whatsoever our Aristotle-stricken logicians may say to the contrary, what is there asserted cannot be easily overturned. Our most celebrated reasoners are of the same opinion, and it will be quite sufficient to mention the name of Locke. He held the syllogism, as a basis for logic, in utter contempt, and yet where shall we find so profound

a reasoner? His work on the Human Understanding, though frequently assailed, is read, I mean only a *select* part of it, in all the universities of christendom, and even where Aristotelian logic is still taught, notwithstanding that it is an admirable specimen of the force of the inductive or Baconian process, and a powerful antidote against the quackery of syllogistic argument! But why is Locke's work countenanced by those professed Bacon-haters? That is easily answered—they were shamed into it, which is a well authenticated fact, nor are all their peripatetical skulls united even yet able to produce any thing equal to it for solidity. They find that induction resists all their artillery of syllogisms, and their heaviest battering train of sophisms, and yet still they cry, with all the obduracy of unmeaning conservatism, “Barbara, Cesare and Darepti, yea and Baralipton too, for ever! Huzza!” These are barbarous words invented for the analysis of syllogistic figures.

Dr. Watts, who I believe would bring in the bible if he were writing on algebra, finding syllogisms in Scripture, imbibes such a veneration for them that one can see plainly, on reading his logic, that he thinks there can be no reasoning without them! Now that is a poor defence of the syllogism, for, of all books, the bible is that which stands the least in need of logic. We receive it as God's word, and do not question its precepts. Logic has been indeed used, and properly too, to prove it of divine authority for

the satisfaction and conviction of unbelievers, but, having done that, it would be irreverent to enforce by logic, truths that we require to be believed even where they are, as for instance the Trinity, beyond our comprehension.

The doctrine of syllogisms is no longer necessary in studying logic, and it is quite sufficient to have just such a knowledge of them, as will enable you to understand the difference between the old and new systems. I would not say this, well knowing it to be an assertion of some consequence, did I not feel myself backed by men of ten thousand times my own judgment, and I will venture still further by declaring my opinion that, were a man as well skilled in syllogistic lore as Aristotle himself, he would not be the more advanced in what is really the art of reasoning, *i. e.* a sincere desire for the enforcement of truth.

After going through the ordinary rudiments, which are in great part drawn, as was before observed, from the precepts of Aristotle, the next step to actual working or induction is the Idols or Prejudices. This great improvement in logic belongs solely and entirely to Lord Bacon, and it is impossible to praise or to estimate it too highly. He lays down as a leading principle, that it is hopeless to pursue any investigation successfully, without first divesting ourselves of certain prejudices arising from the infirmities of human nature itself, and from our education, habits, company, associations, prepossessions, fallacy and incompetency of the senses, and nu-

merous other causes, extending even to our very constitutions. These he lays out under four general heads or classes, and very particularly details those that belong to each class—so that the whole together forms a complete view, to which nothing indeed seems wanting, of all the obstacles that impede accurate reasoning, and investigation of the sciences. Of such importance did he consider this scrutiny that he labors it with unusual precision, as if he wished to impress, that induction, or any the best devised system, could avail but little unless we come to it with an unbiassed mind, and an understanding emancipated from those prejudices that impair the judgment.

The world has seldom seen a finer production than this part of Bacon's *Organon*, but it is not *yet* appreciated as it deserves. Without any other knowledge of the art, it would of itself alone make a tolerable logician, for accurate reasoning depends in a great measure on freedom from prejudices. It ought to be peculiarly acceptable to christians, because it teaches humility and the suppression of vanity and self-love, though I do not remember that this view has been ever taken of it before. I have sometimes pushed this consideration farther so as to think, that no pagan could have produced it, on account of its being so remarkably opposed to the notions inculcated by heathenism—but enough of that lest I be carried too far in my admiration. One cannot, however, sufficiently laud the mag-

nanimity of Bacon in giving the Prejudices as an indispensable part of logic. He knew that it must be exceedingly unpalatable to the Aristotelians—he knew, he could not but know, that while, during his own lifetime, he could hardly expect half a dozen adherents, a whole army of opponents would presently start up, but, nobly disdaining any immediate fame, he manfully resolved to write for posterity, and to illumine future ages.

But you will perhaps ask, and the question would be by no means uureasonable, What is this treatise on prejudices, after all, but a good moral lecture, such as one might expect from the pulpit? Granted that it broaches sound morality, it has two other distinguishing merits. First, it is so inseparably connected with induction that, without it, we cannot proceed to reason inductively, and next, it is a masterly examination, and a most comprehensive detail, of all the sources whence those prejudices spring that are apt to warp or mislead the judgment, and this task is executed with such surprising minuteness and fidelity that it must ever remain as a monument of intellectual power, such as none but a mighty genius could erect. I wish that I could induce you to think so highly of this part of the Baconian logic as I do myself, for, though enthusiastic adiniration may be sometimes a fault, its more general study would, besides inevitably conducting us into the right channel of reasoning, go a good way to realize

all that seems practicable in Mr. Owen's amiable but visionary scheme, to imbue us with more charitable notions towards each other.

Lord Bacon then enters into other disquisitions, previous to the exposition of his grand plan of induction. These chiefly relate to the errors of former philosophers and logicians, and to the necessity of our pursuing a different method in all our inquiries. They form a valuable mass of instructions in reasoning, but this short notice of them is enough here. The next and last step is induction, by which you really go to work in fact and in earnest, but that I have already explained sufficiently for our present purpose.

Having thus exposed the two systems clear enough, as I should suppose, to show you the difference of both, I have written to little purpose if you do not now nearly understand, "how the human mind was enslaved by Aristotle for 2000 years, till Bacon set it at liberty." Nevertheless, wishing to do all that I can towards this object, I shall throw together some other observations that may afford you further assistance.

I shall here observe, that my description of the books composing Aristotle's *Organon* is chiefly taken from Dr. Reid. He is one of the few who has read his author, for most of our writers on logic know nothing of Aristotle, ex-

cept through the narrations and commentaries of others, though they talk much of his obscure style, just as if they had great labor in making out the sense! Hardly one of them reads him in the original Greek, nor yet even in the Latin translation which is much easier—they glean their knowledge from the explanations of our indefatigable ancestors, and thus appear prodigiously knowing by a kind of second-hand learning. I mention this to show them, that they must not think that they impose on every one, though we must admit that their impositions are very extensive. Dr. Reid too makes a fair distinction between the philosophy and the logic of Aristotle, while the superficial gentlemen, to whom I have alluded, seem not to know how to separate one from the other, though they very magnanimously stoop to write for the logical instruction of youth.

DIFFERENCE, AS TO DIFFICULTY, BETWEEN THE OLD AND NEW SYSTEMS.

A very general notion prevails, among those who have only a slight knowledge of logic, that the Baconian method is far easier than the Aristotelian. It is natural to suppose this, though the contrary is the fact. The torturing perplexity of syllogisms was indeed both vexatious and unprofitable, but, though that part is replaced by induction which is very easily comprehended, yet, on the whole, the new method is the most laborious. But it is necessary that you should

understand this clearly. When I say laborious, I mean in point of real *work*. The old method was certainly more difficult to learn, because it consisted of a complicated and intricate machinery, which required a knack to manage, but, when that knack was acquired, skill and cunning chiefly did the rest. It did not exercise the depths of the understanding as induction does, for it only skimmed the surface. Induction demands considerably more mental labor, and besides it requires much toilsome research—a thing, we might say, unknown to Aristotelian logic. But, if induction be more laborious, we are better paid for our labor, since we are almost certain to elicit something worth notice, whereas the old method offered nothing as a reward to the truly sensible mind.

ARISTOTLE'S ERRORS.

This great philosopher is not entitled to such unqualified praise as his devotees would exact. He made numerous important errors, but it may suffice to notice his astronomical ignorance. With his usual dogmatic presumption he insisted, that the sun and planets went round the earth, and in circular orbits, for he had peculiar notions about the perfection of circular motion. As he was the great law-giver of science, no one was minded who dissented from him, and this ridiculous theory was believed for near 1800 years, *i. e.* down to the time of Copernicus.

Here the admirers of Aristotle have no ex-

cuse whatsoever. We do not blame him for not *discovering* the true planetary system, but we are justly indignant at his rejection of it when discovered. Two centuries before he was born, Pythagoras, who was also a Grecian philosopher, demonstrated the true theory, and what is more surprising, considering the poor state of instruments, or other astronomical aids at that early period, that the planets moved in elliptical orbits. Aristotle had thus the truth ready proved to his hand, but he was either not enlightened enough to comprehend it, or not honest enough to admit it. His defenders must take either horn of the dilemma, and either is sufficiently humiliating.

Now what can compensate for Aristotle having thus kept mankind, for so many centuries, in such lamentable ignorance? Not surely his Natural History, Ethics, Politics, Rhetoric, or Poetics. No. It were better that he had never written a line than to have inflicted such a terrible injury on astronomical knowledge.

As far as any one can pretend to judge of what might be, it seems a fair question, whether the world would not have been benefited had Aristotle never been born. That he was the propagator of this fallacious planetary scheme must be assumed as a fact, for I am sure that his warmest defenders will admit, that a word from him would have established the Pythagorean system. But we need not go beyond his own testimony. Here are his words, "Heavy bodies naturally tend to the centre of the uni-

verse ; we know by experience that heavy bodies tend to the centre of the earth : therefore the centre of the earth is the centre of the universe." Have we not here a proof that he advocated this absurd theory, and does it not at once clearly exhibit the science-retarding nature of both his philosophy and his logic ? He takes it for granted, without the least evidence, and contrary to truth, that all heavy bodies tend to the centre of the universe, and then he *proves* the earth to be that centre by an impertinent syllogism !

Had Aristotle never appeared, men might have wandered about considerably for want of a fixed plan of reasoning. But those very wanderings, however distracting for a while, must give a freedom to thought that would end in something rational, and probably light at last on induction. Whatever might have been the result, it is hard to imagine that they could have led to a more mischievous system than syllogistic *reasoning*, for that is dogmatic logic, which must ever be a fruitful source of error. May we not, at all events, suppose that the Pythagorean doctrine would have been adopted, which would alone have rescued mankind from innumerable false notions, and have given a better direction generally to opinion and speculation ?

What I have said respecting the probability of a better logic will not, on due consideration, appear to be either visionary or too fanciful, for it is in some measure strengthened by fact. All classical scholars have heard of the Socratic

Method of disputation, and, if they know it, they must admit that it approaches very near to induction. It was a mild and unpresuming mode of enforcing truth, by first asking a question as it were purely for your information. When that was answered, you asked another that seemed at variance with it, and begged your friend's assistance to reconcile the difference. This brought on a general discussion, in which you watched his discrepancies, though you alluded to them only as if with a view to assist him. But, if he used a word in two different senses, you requested to know which he meant, to the end that you may neither misconceive nor misrepresent what he really wished to express. If you drew him at length into obvious contradictions, and you saw that he was getting angry, you seized the first opportunity to close the argument, on the plea that you had pushed it too roughly, and would be glad of some time to review what you had said. The consequence of this conciliating procedure was, that, if you really had truth at your side, the next time you met your friend, you had generally the satisfaction of hearing him admit that he believed you were right.

This method of argument might be considerably varied, so as to avoid the suspicion of any fixed or settled plan, but its general feature was conciliation and suavity. Now as its founder, Socrates, lived before Aristotle, it might have prevailed, and have been shaped into a regular system of logic, were it not for Aristotle. For when his glittering scheme came out, as men are

always taken with show and pageantry, the unostentatious process of Socrates appeared too simple, and it presently fell before that which promised victory to both sides. An irreparable injury was thus done to logic, and consequently to the whole course of the sciences, since logic is admitted to be necessary for studying the sciences.

I must here observe that, at Aristotle's death, his writings were lost, and not recovered till about two centuries after, because much is said concerning that circumstance. It is alleged that, during this long period, the world was free to adopt any other system, but that is not true. Greece, though so small a spot, was then the world with reference to learning or science, and both the logic and philosophy of Aristotle were in effect preserved, through his pupils, by tradition. The spirit of them certainly remained, and kept down any other attempt at improvement, because they suited the Greeks, who were of a lively, airy turn, and delighted in showing their skill in extempore disputation. This made his logic particularly acceptable, and though it was not so complete as when his works were recovered, enough of it was remembered to cause the rejection of any other. We may, therefore, fairly ascribe to him all those evils to science and reasoning which are so much deplored. There is no exaggeration in the round numbers of 2,000 years, that are generally ascribed to his dominion over the human mind, down to Bacon. He was teaching his

logic long before he published it, and, when Bacon's system appeared, his *reign* was within a trifle of 2,000 years. But we may reckon it as exceeding that, because, unfortunately for the world, Bacon had little influence till a long time after his death, especially in England. To her great shame, it was on the continent that his merit was first appreciated.

A curious defence of Aristotle, which I forgot when noticing his book on Sophisms, is, that he did not invent sophistry, as there were, before his time, several philosophers called Sophists, who prided themselves on putting down an opponent whether right or wrong. But what did Aristotle? Did he, like Socrates, oppose those shameless bafflers of truth? No, but on the contrary he materially aided them by his book on sophisms, which was, to all intents and purposes, a *manual* for their greater convenience. Sophistry was, originally, only irony to annoy the petty philosophers who then pestered Greece, but, when Aristotle gave it a place in his logic, the sophists saw its *value*, and used it to attack both truth and falsehood.

Here is another instance to show that Aristotle was not a witch, as the vulgar say, nor yet a sorcerer. It is taken from Lord Kaimes, and I shall give it without a word of observation:—

“Many reasonings have passed current in the world, where premises and conclusion are both of them false. Aristotle, who wrote a book upon mechanics, was much puzzled about the equilibrium of a balance, when unequal weights

are hung upon it at different distances from the centre. Having observed, that the arms of the balance described portions of a circle, he accounted for the equilibrium by a notable argument. 'All the properties of the circle are wonderful: the equilibrium of the two weights that describe portions of a circle is wonderful. *Ergo*, the equilibrium must be one the properties of the circle.' What are we to think of Aristotle's logics, when we find him capable of such childish reasoning? And yet that work has been the admiration of the world for centuries upon centuries. Nay, that foolish argument has been espoused and commented upon by his disciples, for the same length of time."

You have had already a specimen of Aristotle's *sapiency* in defining "motion," and which if followed up would reduce Definition, as indeed it did, to a mere child's play about absurd attempts at useless distinctions. I shall now give you another instance of this, as noticed by the preceding author:—

"Can anything be more self-evident than the difference between pleasure and motion? Yet Aristotle attempts to *demonstrate*, that they are different. 'No motion,' says he, 'except circular motion, is perfect in any one point of time: there is always something wanting during its course, and it is not perfected till it arrive at its end. But pleasure is perfect in every point of time; being the same from the beginning to the end.' The difference is clear from perception merely; but is far from being clear from this demonstration."

Besides the puerility of this demonstration, cannot we perceive something like an insinuation, if his meaning can be at all divined, that motion is necessary to pleasure? Certainly, on a profound examination, I believe that they will be generally found inseparable, but not always so however. A man heartily tired with hard marching feels pleasure, and great pleasure too, in sitting immoveable on a comfortable seat—insomuch that he experiences an interruption of that pleasure, if obliged to stoop for his handkerchief, should he drop it accidentally.

These instances show that this great philosopher, and great he undoubtedly was, cannot justly be deemed that paragon of wisdom which his admirers work themselves up to believe, for they might be yet multiplied, though I shall add only what Dr. Reid says:—

“In the ancient philosophy there is a redundancy, rather than a defect, of first principles. Many things were assumed under that character without a just title: That nature abhors a vacuum; That bodies do not gravitate in their proper place; That the heavenly bodies undergo no change; That they move in perfect circles, and with an equable motion. Such principles as these were assumed in the *Peripatetic* philosophy, without proof, as if they were self-evident.”

You see by the word “peripatetic” that Dr. Reid, who will shortly assist us much, imputes those errors to Aristotle, and it was only in mercy to him that he spared a more formidable exhibition.

The mind cannot contemplate, without excited feelings, the loss that astronomy alone has sustained by Aristotle. Copernicus published his work *De Revol. Orb.* in 1500, which was only a revival of the Pythagorean doctrine, and, notwithstanding that several eminent men were successively clearing the way for Newton by important discoveries, the *Principia* did not appear till almost two hundred years afterwards. Since that time the bare names of distinguished laborers, who have been hard at work at the study, would fill a volume, and yet we know that much still remains to be done. We certainly can show a good deal, but we must not forget that it is the labor of near 350 years, and the greatest part of those aided throughout Europe by royal encouragement, and all assisted by the powerful arm of printing. The erroneous system of Aristotle prevailed for 1800 years, and, if he had sanctioned Pythagoras, in what a state must not astronomy have been down to Copernicus ! Allowing double the time for the progress of science before printing, there would have been 900 years of comparative experience, instead of which the whole 1800 were, in a great measure, lost to astronomy by Aristotle's absurd immovability of the earth.

To Aristotle may also be attributed the innumerable sects of pitiable *philosophers* with which the world so long abounded, and who seemed to vie with each other in exuberance of folly, as to instance the Sceptics. It is true that

they first appeared rather before Aristotle, but it was certainly his logic that caused the spread of their tenets. Seeing the impossibility of coming at truth by his system, and being unable to overthrow it by a better, some men began to suspect that there was no such thing at all as truth, or, that if there were, nature would not or could not reveal it to human understanding. Accordingly the Academics professed to know nothing, and spent their lives in asking questions of others, in order to discover if any one else knew any thing. But the Pyrrhonists reproached them with being only a kind of mongrel doubters, inasmuch as they admitted that they knew nothing, which was acknowledging that they knew something, whereas they, the Pyrrhonists, doubted whether they doubted that they knew nothing. Were not these fine pranks for the *philosophical* world to be playing? And yet Des Cartes, a French thinker who died so late as 1650, had a strong tincture of this frivolity. He spent some years in fruitless endeavours to discover something of which he could be certain, and at length, after a patient hatching, the shell of his understanding opened, and happily brought forth a panacea for his doubts in the shape of his own existence. But I will let Lord Kaimes describe this wonderful phenomenon, and particularly because he treats Des Cartes with the highest respect.

“He [Des Cartes] was the greatest geometer of the age he lived in, and one of the greatest of

any age ; which insensibly led him to overlook intuitive knowledge, and to admit no proposition but what is demonstrated or proved in the regular form of syllogism. He took a fancy to doubt even of his own existence, till he was convinced of it by the following argument, *Cogito, ergo sum* [he wrote, according to the then custom of the learned, in Latin]: *I think, therefore I exist*. And what sort of a demonstration is this after all ? In the very fundamental proposition he acknowledges his existence by the term *I* ; and how absurd is it, to imagine a proof necessary of what is admitted to be true in the fundamental proposition ? In the next place, How does our author know that he thinks ? If nothing is to be taken for granted, an argument is no less necessary to prove that he thinks, than to prove that he exists. It is true, that he has intuitive knowledge of his thinking ; but has he not the same of his existing ? Would not a man deserve to be laughed at, who, after warming himself at a fire, should imagine the following argument necessary to prove its existence, ‘The fire burns, *ergo* it exists ?’ ”

As his lordship’s forcible reasoning cannot be strengthened by anything that I could say, I shall content myself with directing your attention to the beginning, where he alludes to syllogistic argument, and where you have a melancholy proof of its workings. When we see the intelligent mind of a Des Cartes absolutely hoodwinked, and hugging itself in comfortable deception, we recognise the danger of following Aristotle. He

resolutely opposed his philosophy, but he unfortunately followed his logic, and the usual consequence ensued, that he reasoned unsoundly.

This logic, backed by an an equally fallacious philosophy, operated as a drag-chain on almost every study, and its influence penetrated where one might suppose that it could not be felt. You will probably be surprised to learn that chemistry, which seems more like an art than a science, suffered in a greater proportion by it than perhaps any thing else, and yet this can be as well proved as any historical fact. Accustomed, in reasoning, to explore first causes rather than effects, the old chemists pursued the same injudicious routine, and spent their time in such fanciful pursuits that they commonly ended in being alchymists, or persons who believed it possible to transmute the baser metals into gold—in popular language, to find the philosopher's stone. If, in the course of their experiments, they made any useful discovery, it was generally owing to chance, for nothing but an inductive process will lead to discovery by judgment in chemistry. Even the illustrious Roger Bacon, who is reputed to have possessed more general knowledge than ever fell, in either ancient or modern times, to the lot of any single individual, degraded his mighty genius by alchymical experiments, though a common tinker would now be ashamed to own that he believed in the art of gold-making.

In short this subtle logic affected the whole range of science, by leading men at once into

airy speculations beyond human capacity, and teaching them to despise the laborious and regular approaches of induction, by which only we can distinguish attainable from unattainable knowledge. To what else can we attribute the great extension of astrology, or the art of foretelling events by the stars? Men of the finest intellect spent their lives in this ridiculous study, deceiving alike themselves and others, and, even now, the large sales of predicting almanacs would show, that there are still many ranking above the vulgar who believe in this trickery.

I cannot help thinking too, that Christianity suffered not a little by Aristotle. We know what turmoil and vexation the early Fathers experienced from the various heresies that were constantly springing up, and how ineffectual their pious labours were, in many instances, to stem the progress of error. But we need not wonder at these occasional failures. The leaders of those sects were men who had all the learning of the times, and of course they argued through all the wiles of syllogistic logic. The fathers were obliged to meet them with the same weapon, for, if they did not, they would, in those days, seem unable to contend, and, as it was specially contrived for endless disputation, a practised opponent might appear not to be vanquished, even when truth and reason were manifestly against him. Some of those heretics broached doctrines that could not stand a moment before rational logic, but the sort then in use could give plausibility to the most absurd

tenets—even to atheism itself. Accordingly all those leaders found adherents, no matter how contrary to Scripture their precepts were, and the true church of Christ, notwithstanding the vigilance of her pastors, was scandalised and hurt by men who would have been impotent but for Aristotle's logic.

If I should seem, in some of my observations, to bear rather hard on Aristotle, recollect that my object is to arm you so as not to be bamboozled by the extravagancies of his defenders. Of all enthusiasts, they may be ranked amongst the most incorrigible. Nothing will satisfy them but the absolute perfection of their idol, for, in this, they are as determined as a Turk is to hear nothing against Mahomet, and every one who will not join in their adoration is reproached by them as an ignoramus, or an infidel in reason. No one can speak of any imperfection in this god of their idolatry, without a certainty of being assailed. Volumes have been written against Locke for his strictures on the syllogism, and there is not a line of my quotations from Lord Kaims but what has been fiercely attacked. Even his remarks on the *famous* definition of "motion" have been bitterly impugned, though he happens not to be the first who noticed this imbecile attempt, for Locke was before him on that very point, and I have now lying beside me an old work on logic, without any author's name, printed before his lordship was born, wherein it is reprobated in much stronger language. But those outrageous fanatics are rather *shy* of Dr.

Reid, because he was a great admirer of Aristotle, and looked on him as a first-rate genius. He considers his structure of logic, taken altogether, as the most stupendous fabric ever designed and completed by the labor of one man, and yet, with all this admiration, he was too impartial to overlook his defects. It was at the pressing solicitations of Lord Kaimes that he wrote the account of Aristotle's *Organon*, and he appears to have undertaken it with reluctance—probably because he foresaw that he would be compelled, as a man of truth, to speak unfavorably of a philosopher whose vast genius he so highly respected. Now then see what he says:—

1. “If his [Aristotle's] talents had been laid out solely for the discovery of truth, and the good of mankind, his laurels would have remained for ever fresh: but he seems to have had a greater passion for fame than for truth, and to have wanted rather to be admired as the prince of philosophers, than to be useful: so that it is dubious whether there be in his character most of the philosopher, or of the sophist.”

What do you think of that? But we go on:—

2. “His writings carry too evident marks, of that philosophical pride, vanity, and envy, which have often sullied the character of the learned.” Observe this picture of his honesty as a writer:—

3. “His conduct towards the writers that went before him has been much censured”——
“He rarely quotes an author but with a view to censure, and is not very fair in representing the opinions which he censures. The faults we have

mentioned are such as might be expected in a man, who had the daring ambition to be transmitted to all future ages, as the prince of philosophers, as one who had carried every branch of human knowledge to its utmost limit ; *and who was not very scrupulous about the means he took to obtain his end.*"

Note particularly the last sentence, which I have put in italics, as a sketch of Aristotle's character. Speaking of his Definitions, he says :—

4. " The principles laid down by Locke with regard to definition, and with regard to the abuse of words, carry conviction along with them " — " If Aristotle had understood those principles, many of his definitions, which furnish matter of triumph to his enemies, had never seen the light : let us impute them to the times rather than to the man."

And so we will. But does not this show that Aristotle was at least fallible, though every petty whipster will abuse a Kaims, or any one else, who exposes the absurdity of his definitions ? Now as to syllogisms, which are the prop and stay of his entire system, and which his misguided friends defend with a zeal bordering on ferocity, hear what Dr. Reid says :—

5. " The whole theory of syllogisms he claims as his own, and as the fruit of much time and labor. And indeed it is a stately fabric, a monument of a great genius, which we could wish to have been more usefully employed."

There ! What do you think of that ? Is it not a very strong opinion as to the *utility* of

sylogisms ? But we will continue our extracts. Treating of the second book of First Analytics, he says :—

6. “ We have likewise precepts given in this book, both to the assailant in a syllogistical dispute, how to carry on his attack with art, so as to obtain the victory ; and to the defendant how to keep the enemy at such a distance as that he shall never be obliged to yield.”

Now after this undisguised exposition, and by one who admired Aristotle, of the dishonest tendency of syllogistic art, are we to throw away a Locke, a Kaims, or a Reid, and to surrender our reason and judgment into the hands of men who write logical treatises for colleges ? No, surely not. Let them weary hapless youths with syllogistic *learning*, and sneer at induction, but I hope that you will not be one of their dupes, nor suffer yourself to be “ frightened out of your propriety ” by such bugbear declaimers. Again, see what our author says, when specially treating of the syllogistic theory, “ considered as an Engine of Science ” :—

7. “ The slow progress of useful knowledge, during the many ages in which the syllogistic art was most highly cultivated as the only guide to science, and its quick progress since that art was disused, suggest a presumption against it ; and this presumption is strengthened by the puerility of the examples which have always been brought to illustrate its rules.”

He goes on—and I pray you to read what follows, with marked attention :—

8. "The ancients seem to have had too high notions of the force of the reasoning power in man, and of the art of syllogism as its guide. Mere reasoning can carry us but a very little way in most subjects. *By observation, and experiments properly conducted, the stock of human knowledge may be enlarged without end* ; but the power of reasoning alone, supplied with vigor through a long life, would only carry a man round, like a horse in a mill, who labors hard, but makes no progress."

Observe particularly the part that I have put in italics. That alludes to induction, and you may there estimate its value in comparison to syllogising. You see that our author by no means denies the necessity of a regular system of reasoning, but he maintains in substance that, as it will carry us only a part of the way, we must bring it finally to bear on induction if we look for any result. The whole paragraph forms indeed an admirable epitome of what profitable logic is, and you would do well to treasure it up in your memory.

Inaccuracy of method is a serious defect in any system of logic. Yet Dr. Reid shows, by a very remarkable fact, that Aristotle, who is held up as faultless by his worshippers, failed in this important particular :—

9. "In his enumeration of Topics, Aristotle has shown more the fertility of his genius, than the accuracy of method. The writers of logic seem to be of this opinion : for I know none of them that has followed him closely upon this subject."

I am almost tired of extracts, for I am very slow in copying, and would rather write a page "out of my own head" than transcribe half a dozen lines. Yet I cannot forbear quoting the following. I gave part of it before in my Sketch of Aristotle's logic, but I will not now refer you back as it is so very short:—

10. "The last book of the topics is a code of the laws, according to which a syllogistical disputation ought to be managed, both on the part of the assailant and defendant. From which it is evident, that this philosopher trained his disciples to contend, not for the truth merely, but for victory."

Any one who reads this with an unprejudiced mind must, I think, turn away in disgust from such an insidious logic, if he be above treachery and craft, and have not a lurking or "sneaking regard" more for unprincipled triumph than conviction or truth.

Those extracts are extremely valuable—coming from one who had so high an opinion of Aristotle. Whatever may be said of Locke, Kaims, Campbell, Stewart, or others, Dr. Reid cannot at least be classed amongst his "enemies." They will, therefore, always supply you with answers to his *friends*, because they know that the doctor well understood both his author and his subject. His "Essays on the active Powers of Man" furnish a proof, that he had a great turn for logical disquisitions, and that he reasoned soundly. It would be difficult indeed to find any one better fitted for the task that

he undertook, and it would require a good deal of sophistry to contradict Lord Kaimes' assertion, "No man is better acquainted with Aristotle's writings; and without any enthusiastic attachment, he holds that philosopher to be a first-rate genius."

You cannot imagine how proud I am of this chapter. I began it merely with a view to prevent you from being gulled by the specious representations of Aristotle's perfection, but I now see that it is a powerful aid to my grand object—that of enabling you to comprehend, how "the human mind was kept enslaved for 2000 years, till Bacon broke the fetters that Aristotle had imposed on it." I flatter myself that you have now a clear conception of what once puzzled you so much. If you have not, I fear that I must despair of being able to make you understand it, for I do think that, were I now to stop, you ought, by attentively reading what I have written, to be completely in possession of what is meant by that figurative expression, respecting the long imprisonment of the human faculties.

I will not leave you yet however. It shall not be my fault if you complain of wanting assistance, and I shall therefore now give, as an Appendix, a variety of considerations, just as they occur, without any regard to regular order. You will find, however, that they all bear on the point that I have undertaken to explain, and I consequently recommend them for your attentive perusal. Do not pass any of them, for, though

some may seem to have little connexion with our main subject, you will find that they throw light on it, and every help is necessary towards arriving at its comprehension. With very slender abilities I have engaged in a very difficult undertaking, and it is not unreasonable that, before you pronounce me to have failed, I should expect you to read every word of this book that I have written.

APPENDIX.

ARISTOTLE'S LIFE.

ON this I should not say a word, were it not of some consequence in one point of view. Would you believe that the peripatetics are as testy here as on his writings? Determined to hold up their idol as immaculate, they brand all, both ancients and moderns, as calumniators, who do not admit *its* spotless purity in every respect. The case stands thus. Aristotle's private life, according to the various historians, is liable to suspicion as to honorable or disinterested conduct, and they wax exceeding wroth at the slightest imputation tending to bring his complete perfection in question. They represent him as surrounded, from the earliest to the present time, by enemies—their common name for all who do not join in their own fulsome adulation, and they write whole books to prove that his historians were either open defamers, or were misled by false reports! Now it matters little to us, who are only investigating his logic, whether he were a good or a bad man, but is it not curious that he, who had always so many admirers, should not find a single historian of antiquity to do him common justice, according to their assertions? The thing is

really not worth our consideration. I grant that, when reading an able author, it is more pleasing to know that he was a virtuous man, but we must not carry this too far, else we may scruple to hear a sermon without first ascertaining whether the preacher's life correspond with his precepts.

But beware ! You have artful gentlemen to deal with. This rage for making Aristotle an angel was most observable when the *Novum Organon* began to attract considerable notice, and it has continued ever since unabated. It serves to prejudice the weak-minded against that noble work, by contrasting its author with Aristotle. Lord Bacon's character is unfortunately beyond defence, and the insinuation thrown out is, that nothing good could be expected from such a polluted source, whereas the unsullied purity of Aristotle ought to recommend his logic. You perceive now, that this bepraising of Aristotle's life answers an important object, but I should hope that you will not be swayed by such a miserable *ruse de guerre*. Bacon's *Novum Organon* is the most precious gift that was ever presented to science, and, were its author covered from head to foot with crimes, it would not be the less valuable. He is, however, immeasurably above the Stagyrte in this respect—that he delivers his inestimable precepts with all the modesty of a pupil at an examination before his masters, while “pride, vanity, and envy” are distinguishing characteristics of the other, as you may see in my extract No. 2 from Dr. Reid.

All the faults of style and grammar—all the appearances of pride, vanity or envy—all unsound reasonings, inconsistencies or deviations from truth—all wilful omissions, misquotations, or injurious suppressions—all indications of vicious morality or corrupt views, and, in short, all the defects that we can discover in a man's *writings*, are legitimate objects of censure and criticism. Dr. Reid, who strives assiduously to be impartial towards Aristotle, cannot forbear mentioning the blemishes discernible in him *as an author*, while he says not a word to the disparagement of Bacon, where he had scope enough if he looked to his life. But he was too high-minded, or rather he had too much rectitude, to shelter Aristotle by any allusion to Bacon's frailties.

Let us then leave those pious enthusiasts in quiet possession of their stainless philosopher, without offering a word of contradiction on the innocency of his character as a man. They may, if they please, put him among the gods, and I believe, indeed, that they would have done that long ago, were it not rather a hasardous proceeding without Greek or Roman authority.

ARISTOTLE'S "OBSCURITY."

As a great deal is constantly said about this, it is right that you should not be entirely unacquainted with a matter of so much interest to logicians.

It is generally admitted, that Aristotle wrote his *Organon* with such studied brevity as to render it very difficult, in many instances, to make out the sense of what he means. This is exceedingly perplexing. In addition to that, while he is prodigal of rules, he is so miserly of examples that almost every part of his work is a painful study to understand. Even when on his great favorite, the syllogism, he is not more explicit. Instead of an example, he uses the letters of the alphabet, A, B, C, for the *terms* of a syllogism, and then goes on in this manner, "If A is attributed to every B, and B to every C, it follows necessarily that A may be attributed to every C." You may easily conceive, that it must be very troublesome to compose a real syllogism from such a description, and in fact, were it not for the unwearied labors of successive writers, who have illustrated his meager rules by examples, little now would be known of this famous *Organon*. Patricius has computed that, down to the close of the 16th century, full 12,000 commentaries, and not a few of them very bulky, have been written on it and his other works, and we have now real examples of all the rules, which are a great help to the proper understanding of them. Yet Dr. Reid, in noticing those of syllogisms, says that, though the object was *charitable* to assist the imagination in the conception of matters so very abstract, he doubts if it were prudent, for the honor of the art, as he is afraid that those examples have

only served "to uncover the nakedness of the theory." No great compliment this to either the syllogistic system or its commentators.

Dr. Reid, who read his author's text, and did not, like others, depend on commentaries or paraphrases, acknowledges the difficulty of comprehending his obscure mode of writing. Speaking of his demonstrations on the Conversion of Propositions, a branch of the syllogistic theory, he says:—

"I shall give his demonstration of the first rule. 'Let A B be an universal negative proposition; I say, that if A is in no B, it will follow that B is in no A. If you deny this consequence, let B be in some A, for example in C; then the first supposition will not be true; for C is of the B's.' In this demonstration, *if I understand it*, the third rule of conversion is assumed that if B is in some A, &c."

This will suffice to give you some idea, which is all that you now require, of this so much talked of obscurity. Hear now the causes assigned. That which appears to have most weight is, that, as Aristotle lived chiefly by private or public teaching, he wrote his *Organon* purposely obscure, so as not to be comprehended except through his own instructions. This is confirmed by Plutarch, who gives a letter from Alexander to him, and his answer. Alexander complains of his having published what he taught him as secrets, and he replies that "they are published and not published," since they can be understood by no one without his aid. The

allusion here was to his *Metaphysics* and *Organon*, which were written in the *acroatic* or obscure style, as distinguished from his other works as those on ethics, rhetoric, politics, natural history, which were in the *exoteric*, *i. e.* plain and intelligible language.

Now this is the "head and front" of Aristotle's offending, for which he has been severely abused. Yet I, who am no very ardent admirer of any thing but his great genius, must here step in to give him my feeble assistance. Supposing all this to be true, though it may not be noble or disinterested, still there is nothing in it of baseness or criminality. What is it more than schoolmasters have been always, and are still, doing? They write books of instructions for their pupils, which are no use whatsoever to them, unless aided by their own *additional* instructions. To confine ourselves strictly to our subject, is there any one of our very numerous works on logic, written expressly for young men in college, that they can understand without their tutor's aid? They can answer that best, and I think that I may safely anticipate a universal No. Let us, therefore, at least be just, and not make that criminal in Aristotle which, as we well know, is done by men who have no sinister or unworthy intentions.

But this obscurity is lamented by his defenders as a great calamity, inasmuch as it has produced interpretations of his system quite contrary to his meaning. This is poor *logic*. Why do not they, since they seem to know his inmost

mind, furnish us with an unclouded view, and not keep those valuable explanations churlishly to themselves? God knows we have waited long enough. They cannot reasonably complain of our impatience, if we now abandon all hope, after having given them the advantage of above 2000 years' consideration. But the fact is, and how could it be otherwise after such an amazing combination of literary exertions? that the *Organon* has been fairly laid open, and the result has been to "uncover the nakedness" of the syllogistic theory as an engine either for sound reasoning, or for the development of truth.

ATTEMPT TO EXPLAIN INDUCTION BY EXAMPLE.

Induction being now of the first importance in reasoning, I must give you whatever information is in my power, and here I have to regret that it is very scanty. Descriptions may answer for buildings, mechanical contrivances, steam-engines, or works of art generally, or even such sciences as astronomy and music. Their illustration can be rendered complete by the assistance of engraving, but any intellectual process is very different, and it cannot be understood, unless by very painful study, if examples be not furnished.

Now here it is that we are miserably deficient. If Aristotle was niggardly of examples, Bacon is still worse, for it may be said that he gives none. Innumerable commentators have, how-

ever, remedied Aristotle's neglect, but no one has as yet illustrated Bacon ! On this I may have to remark hereafter, and I shall now only observe, that, not having brains enough myself to supply an example of induction, I have hunted a long time and can only find one that I could venture to offer. When I say this, I mean that I could find only one sufficiently concise for our purpose, for there are many splendid examples of induction extant, as for instance Locke's Essay on the Human Understanding, which is, from beginning to end, an inductive process of reasoning. But then, for such examples as these, you would have to read a very bulky volume through, and that could not be called illustrating induction—it would be almost as disingenuous as Aristotle's occult mode, who set his readers hard at work, in the first instance, to find out what he meant !

The example I am going to give is Sir Humphrey Davy's discovery of the safety lamp. You must know then, that, before its invention, the workers in coal-mines were in constant danger of an explosion of what is called *fire-damp*. This is a gas that will sometimes issue imperceptibly from a vein, and, when a certain quantity mixes with the common air, it then becomes ignitable by flame only. To remedy this danger, as the miners must have light in those subterraneous recesses, various kinds of lamps were devised, but none of them afforded any protection that could be relied on as a security. Some used "steel mills" or wheels which, when kept rapidly

whirling round, and striking against numerous flints in their revolutions, elicited such myriads of sparks as gave the miners in their vicinity sufficient light for working. They were, no doubt, a perfect security, but we may easily judge that they must, if only from their bulk, be exceedingly inconvenient in such a place as a mine—so troublesome, indeed, that the workmen generally preferred the lamps with all their awful danger. A lamp being then the only thing that stood a chance of general use, on account of its convenient portability, Sir Humphrey Davy applied himself to the construction of one which should secure its flame from any contact with the fire-damp. We can hardly imagine any discovery of greater importance. You have often read of explosions which suddenly buried numbers of human beings alive, and sometimes rendered a mine useless, after a prodigious expenditure of money and labor.

Sir H. commenced his investigation by a particular examination of fire-damp, so far as its commixture with atmospheric air was concerned. This was a rational and regular procedure, because it was absolutely necessary as a step to his further progress. I shall not enter into the detail, as my object is only to show his mode of proceeding, and it must suffice to say that he ascertained, by a great number of trials, the various proportions of common air requisite for slight or powerful explosions, and also when none could take place. Having satisfied him-

self minutely on that head, he set about ascertaining the temperature required for causing an explosion. He found "that the strongest explosive mixture may come in contact with iron, or other solid bodies, heated to redness, or even to whiteness, without detonating, provided they are not in a state of actual combustion ; whereas the smallest point of flame, owing to its higher temperature, instantly causes an explosion."

In this manner he went on steadily investigating, and patiently testing, every thing necessary for his great object. It might be interesting to follow him through all his various experiments and persevering researches, but our purpose does not require such particulars, and it will be sufficient to observe that, after having carefully examined, in every possible way, whatever appeared indispensable for *preparative* measures, he then, and not till then, proceeded to his ultimate aim. This was, as has been before remarked, to prevent the flame of a lamp from coming in contact with fire-damp.

Sir H. having thus cleared away every imaginable obstacle, proceeded to his grand and final experiment. Many and various were the trials that he made, but they at length led to the important discovery, that flame cannot pass through a narrow tube. He next discovered "that the power of tubes in preventing the transmission of flame is not necessarily connected with any particular length ; and that a very short one will have the effect, provided its diameter is proportionably reduced." He had now the satisfaction

of seeing that he had attained his grand object, but there still remained something to be done. To surround a lamp with a covering of small tubes would, from the nature of such workmanship, be exceedingly expensive, and, what must be even a greater objection, it would hide the light so as to render the lamp almost useless. Following up his inquiries, therefore, he found that fine wire gauze was, in fact, an assemblage of short narrow tubes, and "consequently if a common oil-lamp be completely surrounded with a cage of such gauze, it may be introduced into an explosive atmosphere of fire-damp and air, without kindling the mixture." Thus was that invaluable acquisition, the SAFETY-LAMP, completed by a purely inductive process of inquiry and experiment.

It now only remains to be observed that, when the mixture is highly explosive, "it takes fire as soon as it has passed through the gauze, and burns on its inner surface, while the light in the centre of the lamp is extinguished." But Sir H. previously ascertained all that, and he furnished such directions as enable the miners to know, by the appearance of the lamp, when there is any danger, and they can make their escape in perfect safety. The mine is then ventilated, and no explosion can ever occur if they observe only common attention.

For the satisfaction of those who are entirely unacquainted with this lamp, I shall also observe that the reason why the mixt air that gets through the gauze does not explode is, because,

in the passage, its temperature is so lowered or cooled, that it is not ignitable, except in the extreme case explained in the preceding paragraph. I may also mention that, as every one knows by a candle, flame being much more powerful at the top than at the side, it would soon burn the gauze but for the great height of the cage, which is about five times that of the diameter of the lamp at bottom.

This "safety-lamp" is an inestimable present to humanity and to science. It has saved thousands of human beings from premature and dreadful death, and it has rendered coal the cheaper by preventing many collieries from partial or irremediable destruction, which is an incalculable advantage, as there is now no article of greater importance for our domestic comfort, and for the prosecution of the arts, manufactures, and sciences. The name of Sir Humphrey Davy will, by this discovery, go down to the latest posterity.

This is considered to be a very pure, and it certainly is a very important, specimen of induction. The method recommended by Bacon is here strictly and most triumphantly followed. It is indeed a noble instance of his plan for studying the sciences, yet it might be more satisfactory to produce an example of an ordinary argument, and to show how syllogistic artifice must yield to its superior force. This is, however, of great consequence for our main object, as it

gives you a *proof* of how the sciences must have suffered by the old plan, and enables you the better to comprehend, how the human mind was enslaved for 2000 years till Bacon came to its aid. It will also make you understand why chemistry lingered so deplorably in Aristotelian times, for, if we suppose one of that school attempting to find out a safety-lamp, it will seem clear that he never could arrive at the discovery. We will suppose him to know previously as much as Davy did, which was indeed no more than every miner knew, that flame only would ignite fire-damp. His first proceeding is to make out a syllogism, the conclusion of which is, that flame is indispensable for the ignition of fire-damp. Having thus *proved* satisfactorily what no one denied, he then, instead of examining, as Davy did, what proportion of common air is requisite to produce an explosion, goes into a *philosophical* investigation of fire itself in the enlarged sense of the word. He finds that it is, according to Aristotle, one of "the four elements," and consequently a thing not to be lightly dismissed. That flame is fire he proves by a syllogism, but then, why flames and sparks should be so very different in their powers—this seems to argue that the difference is very important. It is useless, therefore, to proceed further, till this point be probed to the bottom. Accordingly he reasons most logically, and very extensively, on this subject, assists his reasonings by numerous experiments, and has finally the satisfaction of demonstrating, that that part of fire called sparks,

or red-hot iron, will not ignite any mixture of atmospheric air and fire-damp, but that flame will.

Any one else would think, that he is now only where he was when he first set out on his voyage of discovery, but our worthy peripatetic thinks very differently. According to his profound notions, he believes himself to have made considerable progress, and he now suggests the possibility of ascertaining, by unremitting attention, whence those streams of fire-damp issue, and then of stopping up the apertures as we do rat-holes. But, as a great number of men should be constantly employed for that purpose, he does not think that this suggestion would be well received, and he directs his energies towards means for drawing off the fire-damp. As this would be indeed an effectual remedy, he labors hard to discover the best modes, but they would be all so expensive, and generally so tedious, that, in most instances, the explosion must take place before they could be brought into operation. Forced to see the impracticability of that, he sits down seriously to try whether fire-damp could not, by a mixture of some other body, be neutralised, or at least rendered comparatively harmless. This appears to be very reasonable. Noxious smells have been quickly destroyed in large apartments, by overpowering them with a stronger, and yet a more agreeable, scent—*ergo*, the ignitable quality of fire-damp and common air might be at least weakened by a mixture of something else. To this end he tries innume-

rable experiments, and, though he does not succeed as he could wish, he feels perfectly satisfied, like the alchymists in pursuit of gold-making, that the thing will yet be discovered.

While he is thus toiling in deep philosophical researches, the lamp seems to be lost sight of altogether, and yet the miners insist, as ignorance is always impatient, that nothing will do but a lamp the flame of which shall be secured against contact with the external air. Those fellows do not, and what is more, never did in any times, understand syllogistic argument, and when they hear how he has been laboring for their good without producing any thing which they, like brutes as they are, have not intellect to appreciate, they exclaim, "that he might as well be whistling jiggs to a milestone as to get up a lamp, such as would suit them, by that there kind o' way." He does, however, at length turn his thoughts towards the lamp, and he then demonstrates that fire cannot exist without oxygen, and that, as a lamp cannot burn without a supply of that fluid, its flame must be in contact with the external air. His conclusion is therefore, that it is quite impossible to contrive any lamp that will not be liable to cause explosions. Should this be doubted, he is ready to confirm it by new syllogisms, in addition to those which he has already given, and which he pledges himself cannot be controverted.

Now I assure you that, in all this, there is very little of exaggeration. Is it not proved by experience? Every one admits that the old che-

mists made hardly any progress during twenty centuries, while the discoveries of the last eighty years fill us with astonishment. We cannot assign an earlier date to *modern* chemistry, and that means when chemists began, generally, to shake off the Aristotelian fetters, and apply induction to the science. They then began to work in earnest—before that they were only philosophising.

I think that you must be highly gratified by this example. It shows you more clearly than by any description, the connexion of logic with the study of the sciences. I dare to say that, notwithstanding all the pains that I had previously taken, you could not well conceive what it had to do with chemistry, which seems to be more a work of the hands than of the head, and which requires the use of machines, instruments, and even ordinary tools. You now see that plainly which was before indistinct. This is very important, because every one easily apprehends why logic is necessary for an argument, or for the discussion of abstruse questions, but only a few can understand how it is applicable to science. You see also the real working of the two systems on the same occasion. The Davy example proves the value of induction by its splendid result—the peripatetic example shows how valueless the old system is as to any rational usefulness.

A PEEP INTO PHILOSOPHY.

It is right that you should know something of what the philosophical world are doing. You must, however, be satisfied with even less than an outline. A bare list of all the various *systems*, as they are called, would require a heavy volume, and I can do little more than explain what it is that is designated philosophy.

From the earliest ages of literature, certain men applied themselves to the discovery of truth. Of these, not only the names but the particular doctrines of some, who lived 500 years B. C., have come regularly down to us, and it is scarcely necessary to say that they were Grecians. These men were called philosophers, because the business of their lives was to acquire what was, in their opinion, real knowledge. For instance one of them, Anaxagoras, who died 428 years B. C., at the age of 72, used to say "that he preferred a grain of wisdom to heaps of gold," yet still, though he travelled into Egypt for improvement, some of his notions, particularly on the heavens, were absurd in the extreme. The "discovery of truth" means, the establishing of some particular point, tenet or doctrine, by irresistible arguments, but, unfortunately, no philosopher ever yet maintained any position or assertion that was not assailed by another. We may say, without any overstraining, that the aim of philosophy appears to be undoing rather than doing. No sooner does a philosophical work appear than another

is preparing to refute it, either partly or entirely. Demolition seems to be the grand business of philosophy, for, as new subjects cannot be always found, there is never a lack of employment in taking to pieces the labors of others. Every new system is followed, as a matter of course, by its refutation, and sometimes we are favored with refutations of refutations. This has been the usual routine of philosophy from the earliest times of antiquity, and it still continues the same. Each professor thinks, nay is quite certain, that he is right, but we, who must keep at humble distance from such profound reasoners, know this truth at least that they cannot be all right—*ergo*, some of them are wrong.

The philosophy to which I have adverted is the higher department, or that which relates to our faculties, powers or affections, and is called Ontology, or generally Metaphysics. Here it is that there is such sad disunion. Might I dare to offer an opinion I would say, that it arises from not admitting exceptions. Philosophers maintain that there can be no exception in favor of any thing proved to be true or false, good or bad, just or unjust, or of any other character. If it be true or false, or good or bad, it must be so, without any extenuation, under every circumstance whatsoever. This is much too severe for poor human nature, and consequently they have been laboring for twenty-five centuries, without establishing even one solitary unassailable truth, except such little truisms as have been known to every child since

the beginning of the world. I think that I can give you a clear explanation of this by an example, and it shall be by the very word *truth* itself. You are asked, "Is not truth good?" and you of course unhesitatingly answer Yes. Then, "Since truth is good, should it not be spoken at all times?" to which, as an honest man, you again as promptly say Yes. See now in what a predicament you stand by the following case:—

An amiable young gentleman, who was followed by hired assassins, escaped, unperceived by them, into the house of a rigid no-exception philosopher, who was his dearest and most intimate friend, and to whom he explained his danger. The assassins coming up, and seeing the philosopher at his door, asked if he were there. His character for veracity was such that, on a simple denial, they would have immediately gone away, but his *principles* would not allow him to say No, and they accordingly went in, found the young gentleman concealed in a back apartment, and murdered him.

Now, were you this young man's father, would not you account our philosopher as the murderer of your son? Your answer would be that which every father would give, and you would bitterly curse such wretched philosophy. But let us examine the matter calmly, and perhaps even then we shall find nothing for admiration. We will suppose the philosopher deeply affected, as no doubt he was, by such a terrible sacrifice to principle, but was there no vanity or

self-love at the bottom of it? He had acquired a character for undeviating truth, which would be lost if he swerved in this instance. The assassins might afterwards have learned, though too late for their wicked purpose, that the gentleman was in the house when they inquired, and the philosopher's fame would be tarnished. Is it not a fair question, therefore, whether he sacrificed more to self-love than to truth or principle? It would, indeed, have been a noble sacrifice to save his innocent friend on the altar of his own popularity or fame, but vanity, self-love, false pride, and uncontrollable ambition, were stronger incentives.

Turn this proceeding in what way soever we can, it shows the danger and the folly of what some weak-minded men would, in the simplicity of their hearts, call philosophy. Nature and religion teach us to prevent, as far as we can, the perpetration of crime. Murder, especially of the innocent and virtuous, is one of the first magnitude, but, according to those ravers, we must see it committed sooner than utter the monosyllable no. Nature, religion, and every thing else is, with them, as nothing compared to the violation of a *philosophical* principle.

I presume to offer a remedy for this defect in philosophy, for surely that must be a defect which has produced nothing tenable, or available for our guidance. When investigating any truth or principle, after having demonstrated its propriety, utility or excellence, we should then diligently examine whether it may not be liable

to some exceptions. I know that this proposition will be laughed at by the philosophers, but I may laugh at them in turn, since, by maintaining a contrary doctrine, they are laboring in vain, and literally doing nothing but wasting paper. Human nature is too imperfect for invariable rules, and the only way to develop truth is, to make the necessary allowances for our imperfections. Many things are easily proved to be so and so, but it is not quite so easy to prove that they are always the same. Exceptions are the inheritance of our nature, and to refuse them is to despair of truth. Thus every one admits that prudence is a virtue, but to prove satisfactorily what prudence is, unexceptionably, may be found somewhat difficult. However we will suppose it proved. What then? Prudence has often lost a man, while acknowledged imprudence has saved another. But then it will be alleged, that this does not at all militate against prudence being a virtue. Be it so. But we must recollect that, in pronouncing prudence a virtue, we mean that it is wisdom, and a want of wisdom has sometimes proved to be more serviceable than wisdom itself.

When I mentioned *prudence* it was because it occurred to me at the moment, but it is only a poor instance in comparison to others that might be adduced. It serves, however, to show the necessity for an exceptive system. When we ask for results, as to those philosophers' labors, what do we find but "a beggarly account of empty boxes?" They have, in fact, been doing

little else than quarrelling—knocking one another down for the pure love of truth. But, instead of trying to catch an unmanageable illusion, they might have been usefully employed in examining the imperfections of received truths, and, without fundamentally destroying such truths, in enumerating and classifying the contingent exceptions that must, by reason of our great distance from perfection, inevitably occur. By received truths I mean those only which, for sake of convenience or morality, we must admit, such as that of prudence being a virtue—for when the complete fallacy of any assertion, however popular or long sanctioned, is discovered, it should be vigorously attacked without the least ceremony. Had philosophers directed their attention as I have hinted, even from the time of Bacon without at all alluding to anterior ages, we should now have a vast accumulation of valuable points of knowledge in metaphysics, established and confirmed by successive investigations. It would also have prevented a number of absurd theories which, under the attractive glare of *learning*, have tended to degrade rather than to exalt the mind of man, by filling it with dangerous doubts as to the possibility or existence of any truth.

Great Britain, France and Germany, are the chief seats of this philosophy. Writers and system-makers have sometimes appeared elsewhere, but while Scotland teems with “feelosophers,” as Cobbett used to call them, it is remarkable that Ireland is nearly a blank in this

respect, though I am far from looking on it as a discredit. Have not we, plain people, a right to inquire about what they have been doing down to the present time? May we not respectfully ask, whether they have fixed any one point of positive utility, established any one rule of general advantage, or brought to light any one thing or principle of undeniable service to man? Observe that we, with all our ignorance, are not unreasonable. We do not look for wonderful developments or brilliant discoveries. Inquiries about our intellectual powers cannot be expected to lead further than to solid conclusions, but it would appear that they have led to nothing decisive.

Indeed if we press for results, I believe that Locke will bear away the palm. By proving that we have no innate ideas, he did actually open a field for practicable experiment, for it was on this that Mr. Owen founded his grand "co-operation" plan. He proceeded on the assumption, that our notions are formed FOR and not BY us, which is essentially the no-innate idea doctrine. Accordingly he believed it quite possible, to educate children with notions and dispositions very different from what are generally inculcated, and that they might be brought to such amiable habits as to live in charity towards each other, almost free from those vices or turbulent passions that produce such unhappiness in the world. He completely established the feasibility of his plan at New Lanark, for, amidst the despoiling influence of unavoidable

connexion with the vitiated, he did effect a moral change sufficient to justify his assertions. His project failed only because, from the constitution of present society, it was quite impossible to afford it a fair trial.

It is difficult for us to conceive, what possible benefit can arise from certain questions on which philosophers have written volumes, and vehemently contradicted each other, such as man's free will or agency, and why he can stir a finger, or let it alone, just as he pleases—synchronous ideas, or whether we can think of two things at once, or whether the mind does not glide, though imperceptibly, from one to the other—whether smelling is not more in the mind than the nose, and whether it is not thus that we distinguish between the disagreeable and the pleasant—why we can, without seeing either, know the noise of a drum from that of a cart—how we can fix our sight on a single speck, or on an extension of miles. To us it seems of no importance whether such points be ever definitively settled, but, as philosophers have considered them more deeply than we, our best plan is not to meddle with such profound matters. But, since they sometimes enter upon discussions not quite so harmless, I think it right to observe that Dr. Reid says, when reprobating Hume's "shocking" paradox, that things may begin to exist without a cause, "What is there so ridiculous as not to be maintained by some philosopher?"

This must suffice for ontology, or the abstruse

department. You see that I could not avoid being tedious, though I fear that I have very imperfectly satisfied your curiosity. But you must recollect, that I have been endeavouring to convey some notion of what has occupied a hundred thousand volumes, and you must give that consideration its due weight.

The other branches of philosophy are much more intelligible. You have heard of the Newtonian, the Linnean, and many others, generally called after the names of their founders. The first relates to astronomy, colors, optics—the other to botany. These enrich the world with many valuable discoveries that enlarge our general comforts or knowledge, because they are chiefly based on actual inspection or experiment. But they are, nevertheless, called philosophy, because they must necessarily embrace a good portion of speculation, or what is purely philosophical. Thus astronomy attempts to demonstrate that the earth's atmosphere extends to 46 miles in height, though no balloon ever yet ascended much beyond our highest mountains. The business of a geologist is, to explain the structure of our globe as far as it can be known, yet he is not satisfied without considering the interior of which we know nothing, since the deepest excavation ever made has been scarcely a mile in perpendicular depth, which can hardly be called penetrating the earth's skin. But all such things are fair subjects of speculative theories, because, however absurd some of them may be,

many of them have led at length to actual proof. Besides, supposing that they did not lead to any positive conviction, it is beneath the dignity of man to sit down contented when he meets an obstacle and say, "I must stop now." A thirst for knowledge elevates, honors, and even glorifies our frail nature—it is that which particularly distinguishes the civilised from the savage. Every sensible person feels assured that we can never visit the moon, but is that a reason that we should not try to discover if it be inhabited?

But the term philosophy has been carried a little too far, and is now literally burlesqued. Books are published called the philosophy of fishing, hunting, shooting, cooking, drinking, walking the streets, boxing, chess-playing, and even a tailor will advertise his philosophy of fitting. What else could be expected? The learned have brought all this on themselves. Could they not let philosophy remain confined to its proper sphere? No. They could not take a new or enlarged view of any thing, without calling it philosophy, like the late Mr. John Walker, an eminent scholar, who called his scientific treatise on arithmetic, "The Philosophy of Arithmetic." Need we wonder then that architects, painters, musicians, and others, should publish their *systems* of philosophy, and that so handsome a word should at length descend gradually to cooks and tailors? Diogenes, a filthy unwashed dog, whom no decent man could approach with unstopped nostrils, and who

was banished from his country for coining false money, is still in the list of philosophers, because he loved dirt and snarling *systematically*.

Fearing that I may not have completely satisfied you, as to what our ontological gentlemen are doing for your benefit, I shall say a word on the synchronous-ideas philosophy, because I think that I can make it tolerably intelligible. They regard it as extremely important, and it has occupied many and many a ream of foolscap.

This means, as I said before, whether we can think of two things at once. As usual, our philosophers are not here in accord. For some maintain that we can, while others insist that there is a gliding of the mind, though scarcely perceptible, from one to another. They generally illustrate the matter by a guinea. One says he is sure, when he looks at it, that he can, at once, see and comprehend its circular form and yellow color, but another is equally certain that he only imagines that he does so, because the mind must pass, however instantaneously, from the circular form to the yellow color, or from the yellow color to the circular form. Both parties lavish a great deal of logical argument to prove their respective doctrines, yet, despite of logic, neither convinces the other, for he who is isochronal—look in Johnson—will not yield to the non-isochronal, nor this last to the isochronal.

Now you have doubtless seen an able master of the piano-forte, harp or organ, play at first sight, and in strict time, a piece where the bass was entirely different from the treble. Here, to say nothing of chords or pedals, are four distinct operations at once, that is, reading and playing each of the two lines. But there are some who will, in addition, sing another part different from the treble, with words, and here we have no less than eight operations comprising four of the sight, two of the hands, one of speaking, and one of singing, all done at the same time, and without the advantage of any previous preparation. I know not whether our worthy metaphysicians ever lighted on this, but I know that I never saw it in any of their dissertations, and I conceive that it goes very near proving that we can think of two things at once. But I advise you, however, to keep your peace, and never show your skill by any contention of this kind. You would gain nothing by it, for the gliders would insist that our performer slips unawares from one operation to another. Let us admire in silence, and not disturb their profound meditations.

I cannot conceal my gratification on finding that Lord Bacon strongly supports my *exceptive* views. It is extremely perilous for one like me to hazard any suggestion concerning philosophy, and I am, therefore, greatly relieved on being backed by such authority. He particularly recommends "the registering of doubts," and that comes very close to what I have ventured to propose. After dividing doubts into

two kinds, "particular and total," he says in his *Advancement of Learning* :—

"The registering of doubts hath two excellent uses: the one, that it saveth philosophy from errors and falsehoods, when that which is not fully appearing is not collected into assertion, whereby error might draw error, but reserved in doubt. The other, that the entry of doubts *are* as so many suckers or sponges to draw use of knowledge; insomuch, as that which, if doubts had not preceded, a man should never have advised, but passed it over without note, by the suggestion and solicitation of doubts is made to be attended and applied."

The last sentence is an exceedingly bad specimen of composition. But we can perceive, however, that the doctrine, if it be not exactly my exceptive system, is at least an indication of it, and shows how difficult it is to think of any thing connected with reasoning that Bacon has not considered. He further says :—

"But that use of wit and knowledge is to be allowed, which laboreth to make doubtful things certain, and not those [that] which labor [laboreth] to make certain things doubtful."

Now that is not far from my idea about exceptions, and, as to what I have said on the utility of enumerating or pointing of them out, I think that I am strongly supported by Bacon, for he adds :—

"Therefore these calenders of doubts, I commend as excellent things, so that there be this caution used, that when they be thoroughly

sifted and brought to resolution, they be from henceforth omitted, discarded, and not continued to cherish and encourage men in doubting."

This is exactly the principle that I have inculcated, that "when the complete fallacy of any assertion, however popular or long sanctioned, is discovered, it should be attacked without ceremony." I am therefore eased of any scruples that I may have had about an exceptive system, and I now offer my considerations with increased confidence.

RECEIPT FOR ANSWERING A FAMOUS QUESTION OF THE ARISTOTELIANS.

When they are driven into a corner by an able logician, who is not scared by their heaviest fire of pop-gun syllogisms, they will, as a last resource, ask with seeming humility, Whether the agreement of nearly the entire learned world for above 2000 years, and which still continues pretty generally, is not something like a proof that Aristotle's syllogistic system could not be very wrong? Should any of them ever put that question to you, answer immediately No, and then proceed to support your negation inductively, that is, "by collecting facts and instances, and deducing from them a general conclusion." As a single instance will, in some cases, serve as well as a thousand, I shall furnish you with one which will set this famous question at rest :—

THE HEATHEN MYTHOLOGY.—We are every day discovering proofs that the Greeks,

however unwilling their historians appear in admitting it, originally borrowed a great part of their learning, science, and civilisation itself, from the Egyptians. That they took their mythology or *religion* from them is not denied, for Osiris, the great deity of the Egyptians, was deemed the son of Jupiter. The kingdom of Sycion was founded 2089 years B. C., but, without going so far back, we shall take no earlier than the siege of Troy, which dates about 1190. The Greeks must then have been in a tolerably advanced state, for Hesiod, who lived say two and a half centuries after, says that they reckoned, in his time, 30,000 gods and goddesses—a proof that they must have been a people of considerable literature for a long period before. It is admitted that they engrossed learning and civilisation to themselves, and that they justly looked on the rest of the world, not excepting even the Romans, their ultimate conquerors, as barbarians. When Rome became the mistress of the world, and the centre of polished society, she continued the heathen mythology, which she had originally imported from Greece, till about 330 A. D., when Constantine established christianity. But Julian the Apostate introduced heathenism once more about 380, and, though it was quickly superseded again by christianity, we can hardly suppose that it was extirpated in less than a century after. By extirpation I mean its general rejection or abandonment, and I think I may very fairly set that down to 480, if not 500. Now 1190 added

to 330 make 1520 years, during which it was the religion of the most learned people in the then world, as is acknowledged by all our writers. But it was also that of Egypt for probably 1000 years before the siege of Troy, though I shall say only 500 to obviate any cavilling, and this, added to 1520, makes 2220 years, during which the heathenism in question was professed by three of the most polished nations of antiquity successively, without including the 150 years of its decline, which would make 2370.

The sun of Egypt was setting when Troy fell, but she is allowed to have been the grand, if not the exclusive, emporium of learning and science, for a long period when Greece was in a rude state. Her mythology was *substantially* the same as that which prevailed afterwards so extensively, for the vast additions of the Greeks were only what they would call improvements. Here then we have three of the most celebrated communities professing, during 2220 years, such a rank absurdity as that no one, for many hundred centuries, has ventured to advocate the re-establishment.

For a christian to speak of its absurdity might seem to be superfluous, but I wish to show, exclusive of its incompatibility with reason or common sense, its striking inconsistency even with itself. To say nothing of the inferior divinities, some of whom were murderers, thieves, drunkards, robbers or cheats, and appointed to filthy offices from which decency turns with disgust, we should expect that Jupiter at least, the

“almighty” Jove, would be a pure character. But what do we find him? A fornicator, an adulterer, and, worse than all, as supreme arbiter, a partial, and often a cruelly unjust, judge! Besides several mistresses, he had seven wives, with the last of whom, his own sister! Juno, “the Queen of Heaven,” he lived very unhappily, owing to her well-founded jealousy. They used to have regular scolding matches, in one of which words went so high that he called her a *bitch*, according to the authority, I think, of Homer, and he often beat her severely. His lust was so unbridled that he has frequently come down from his “high Olympus,” and deflowered innocent maidens on earth, so that parents who had handsome daughters were kept in a state of constant inquietude, as he was a great judge of female beauty, and assumed shapes to accomplish his purpose which it would be indelicate to mention. Even before he married his sister, he violated her by stratagem.

On reading this, one would think that the Greeks and Romans set at naught chastity, conjugal fidelity, justice, temperance, moderation, and all other virtues. Yet they estimated them in a certain manner, while their gods and goddesses practised all sorts of crime, and here it is that their strange inconsistency appears. Some, who are classic-mad, attempt their defence by saying that the well informed did not believe in this mythology, and that they kept it up only to overawe the vulgar, but this is a miserable attempt at their vindication. It is in

peril that our belief in a religion appears. We commonly assert that sailors, who never prayed before, do utter prayers for their souls when the ship is settling, and all hope of saving their bodies gone, and we find the Greeks and Romans, when under any great calamity, offering solemn sacrifices to appease the anger of some god whom they had, as they believed, provoked by a neglect of his customary honors. Yes. It is in vain to deny that they believed in this mythology. They prosecuted the greatest men for blasphemy, or "irreverence to the gods," and enforced their strict worship by numerous laws and regulations. Socrates himself, who was so enlightened as to arrive at a just notion of a Supreme Being, and who cheerfully suffered death sooner than deny it—Socrates, who approached so near to christianity before it was known, had still some qualms as to respect towards certain gods, for he acknowledged it on his trial, and his last words were, "We owe a cock to Esculapius—discharge that vow." Dacier attempts to defend this, but what defence can avail against the simple undisputed fact?

In short it betrays great ignorance to say, that the learned did not believe in the gods. There were, to be sure, some who did not, but have not we our Voltaires, Humes, and other deistical writers, in perhaps a greater proportion? When the Roman consuls entered into office, they were always obliged to offer Juno a solemn sacrifice, and if we allege that none of them believed in its efficacy, why then we must allow

the Romans to say, supposing them the moderns and we the ancients, "The Speaker of the British house of commons always, before proceeding to business, prayed for a blessing through Christ Jesus, but it is unnecessary to observe that none of that illustrious and enlightened body believed in its efficacy, as the whole thing was merely a piece of policy for an example to John Bull—a common name for the vulgar multitude."

So far from concurring in such opinions, I do not hesitate to say, that the belief of the learned Greeks and Romans was *much* more sincere and universal than what is found in christianity. Their *dissenters*, if we except the Epicureans, rarely went so far as total unbelief, while we have, besides unblushing deists, entire sects living as christians, two of whom might be particularly mentioned, who are justly suspected of not believing in the divinity of Christ, since they will never give an explicit answer on that important point.

The heathen mythology was, in every possible view, the most senseless, ridiculous, impious, stupidly inconsistent, and outrageously monstrous, religious system that was ever devised. It was a complete inversion of every thing in the nature of religion, for it made the deities, chief and all, devils. What can be imagined more unnatural than to pray, and offer sacrifices, to those whom we believe to be infamous? We deplore the unlettered savage who worships the sun, or a piece of wood, that he fashions, with a sharp stone, into a frightful figure, though this

is not worse, for nothing could be worse, than the detestable heathen mythology. The missionaries at Ceylon were shocked at finding the natives worshipping the devil, but they gave, in substance, this explanation, "God is too good to do us any harm, and we, therefore, rather propitiate the devil who is constantly at work for our injury." Now that is a better reason than could be given for the abominable heathen worship, for they at least admitted one good deity, whereas the Greeks and Romans seemed determined to have *all* their divinities, male and female, not excepting Jove himself, either shamelessly bad, or stained with some particular vice. They would not let even their guardians of any virtue remain pure, and accordingly Diana, the patroness of chastity, after having long preserved her virginity, at last makes a slip, and not only prostitutes herself to Endymion, but actually *seduces* him. After that she was intimate with Pan, and the *giant* Orion, and yet the most splendid temple, that at Ephesus, which was one of the Seven Wonders of the World, was erected and consecrated to her memory and worship as "Goddess of Chastity!"

In reviewing this sickening prostration of reason and common sense, our only consolation is that such a diabolical faith, for it surely was a worship of monsters, has been so completely eradicated. After the year 500, or perhaps somewhat before, no people were foolish enough to profess it. For those who the most obstinately resisted christianity, as the Slavons or

Poles, had a particular paganism of their own like the ancient Gauls, Germans, British, Irish, and others, nor has any one since made an attempt at its revival. This is indeed consolatory, for it cannot be said to arise from timidity, or any lack of foolhardiness. Many and many are the ridiculous and impious doctrines that have been broached under the name of religion, as for instance those of the Adamites. This sect appeared in Germany, I think about three centuries ago, and afterwards spread to England. In imitation of our first parents they went naked, lived in common, and, after the example of Cain and Abel, they married their sisters ! At length the different governments put them down by force, but have we not seen, in our own days, people deifying a wretched old woman, and persons of rank and wealth providing a most costly silver cradle for her forthcoming "Shiloh?" Surely we may believe such fanatics capable of the greatest absurdity, and yet none of them ever dreamed of reviving the heathen mythology. No. That was too gross for the wildest visionaries—too nonsensical even for the frantic—too blasphemous for the most wicked, and too degrading for the lowest rabble.

The utter extinction, throughout the world, of the heathen mythology, and the circumstance of no direct attempt at its revival during nearly fourteen centuries, would bear ample testimony, if we had no other evidence, of its absurdity. Yet it was the *religion* of the philosophers, sages,

orators, senators, moralists, scholars, and scientific men, of three of the most distinguished countries in history, during the long period of 2220 years. What then becomes of the famous Aristotelian question? Is it not quite clear, that the general agreement of the learned in any opinion or doctrine, for any length of time, is no proof of its soundness? It has been fully demonstrated, that the syllogistic system is inefficient as an engine for the discovery of truth, or for studying the sciences—it has been tested, experimentally, by the superiority of induction, and an appeal to its being so long cherished by the learned is no better argument than to say, that because they so long believed in the heathen mythology, it should never have been superseded by christianity.

ASTROLOGY.—Though the heathen mythology completely answers the Aristotelian question, yet, since this opportunity presents itself, I may introduce it as a second argument. But, having detained you a good while with the preceding, my notice of it shall be very brief.

Astrology is the oldest science on record, if we except astronomy. Even with that it may be pronounced coeval, for the first use that was made of it appears to be the prediction of events. It was practised in Assyria, Babylonia, the Hindus and Egypt, and we may say that its origin dates from 2233 B. C., when the celestial observations were begun at Babylon. We know that it was extensively cultivated by the Greeks and Romans, as appears from their very

particular accounts of many celebrated proficient in the art of divination. Nor was its progress at all impeded by the introduction of christianity, for it was pursued, not only as a regular but a most important science, everywhere by men ardent in their belief of the Gospel. It was scarcely shaken by even Newton's discoveries, and in fact his Principia was published full half a century before the rejection of astrology became general.

Now here is a study, dignified with the name of *science*, in the hands of the learned for nearly 4000 years. That it was their exclusive province cannot be denied. None could be an astrologer without being well versed in whatever was known of astronomy at the time, and none but the learned could have that knowledge. We cannot date the rejection of astrology by the learned, generally speaking, earlier than 1740, for, even after that, some of them did not disdain its study, and it was not completely relegated to empirics and impudent impostors much more than half a century ago. Perhaps there never was a grosser delusion than astrology. It was full as ridiculous as the inspection of entrails by the Greek and Roman priests, and I now ask our Aristotelians, a second time, is the general agreement of the learned in any opinion or doctrine, for any length of time, a proof of its soundness? They would *modestly* insinuate that it is, but if, after these two instances to the contrary, they do not admit their error, we can only pity their incapacity to reason, and lament the

deplorable effects of the false logic which they advocate.

WITCHCRAFT.—I mention this, not that there is any necessity for further argument, but merely as it strikingly exhibits the deplorable effects of error among the learned, wise and humane, and that too in what are universally acknowledged to be enlightened times—if there ever was, or ever will be, such a phenomenon as enlightened times.

Witchcraft must be of very ancient date, for it can be traced in Scripture, and there are indications of it in Greek and Roman history. However, as that kind was different from what was known in more modern times, in England, France, Germany, and other parts of Europe, and which is the object of my strictures, I shall not go beyond it in these brief remarks. That it must have got very early footing in England, is evident from her own writers, and the many laws that were made against it, but I shall come down at once to queen Elizabeth. It appears that witchcraft had increased so alarmingly, that additional precautions were deemed necessary, and she accordingly had an act passed, full of new severities, which may be seen in the statutes of 1603. Subsequent monarchs enacted other laws to repress this *crime*, nor were all the statutes against it repealed till the 9th of George II.

What was this atrocious crime which excited such universal indignation, and which produced such direful effects as to call for the most exemplary punishments? Hear! and listen atten-

tively. Figure to yourself then an ignorant old woman, so enfeebled by years as to be incapable of hardly anything but scandalous gossip, or relating old wive's tales—though by the bye some *young* women are reported, perhaps maliciously, not to be averse to scandal. But that is nothing to us—we go on. This old woman was seldom of the middle size—being generally very tall or very short, either of which were untoward circumstances. She was so disfigured by cross-grained wrinkles as to be no very pleasing object to behold, and indeed the uglier that she was, so much the worse for herself, as that alone would plead strongly against her. She was what is commonly called a *lone* woman, because she had outlived her family and friends, though it would seem that friends were scarce in all times, since even philosophers themselves still admit, that “a friend in need is a friend indeed.” However, living by herself was greatly against her, and yet, if she took in some deserted child to break the solitude, which sometimes happened, it was alleged that she used her as an assistant in her spells.

Though she subsisted by begging, or, if she had ingenuity enough, by fortune-telling, people wondered, notwithstanding, how she lived, and it was shrewdly imagined that her poverty was only a disguise, as she could command any money that she pleased. She was at first called a beldam, then a hag, and was at length *suspected* to be a witch. She was then *reputed* to be one, and it was finally discovered that she was one

actually. This discovery was made by some intelligent neighbours, generally of her own sex, who, in self-preservation only, paid more attention to her movements than they did to their own business. They observed that she muttered while passing certain doors, for old women will talk to themselves, "any act of parliament to the contrary notwithstanding." As they never could make out what she said on those occasions, they very sensibly concluded that it was something "not right," and, if any one died in the house a few days after she passed it while muttering, what could be plainer than that she had caused the death? Yet, though that was sufficient to satisfy the most incredulous mortal existing, they were not rash or precipitous in their judgments, and they did not proceed to extremities till some fine young men or women, who had *formerly* excellent constitutions, began to pine away, and become consumptive. They then searched her apartment, for she chose to have but one though she could easily command a palace, and there they found the most appalling proofs of her guilt. These consisted of melted lead or wax—hair or wool twisted into shocking knots, or other forms still worse, and, to complete the evidence of her wickedness, a broom! the identical one on which many credible witnesses had seen her, on clear moonlight nights, riding in the air, and going through the windows, no matter how high, of the rooms wherein her victims slept. All these facts would be quite sufficient to establish her guilt,

but what sealed her condemnation was the finding of a waxen figure, especially if part were melted off, which bore a resemblance to some one who had recently died before that person *ought* to have died. In that case they immediately beat or stoned her to death, but, when the laws made that felony, they indicted her for witchcraft, and, if found guilty, she was sentenced to be burned alive, though hanging was the punishment of ordinary murderers.

Good God ! can any one consider this without being amazed at the slow progress of reason ? To think of an attorney-general prosecuting with all the ardor of a man anxious to have guilt punished, and he again supported by able crown lawyers—a learned, humane, and upright judge, impartially sifting the evidence, weighing it against the possibility of innocence on the part of the accused, laboriously reviewing the whole, and tenderly leaning to the side of mercy whenever any fair opportunity offered—twelve honest citizens, any one of whom would shudder at doing an act of injustice, conscientiously returning a verdict of guilty—the judge receiving it as the only one which they, as men sworn to try the case “well and truly,” could give, and then passing sentence of a cruel death with feelings testifying his regret, that the enormity of the offence should call for so severe a punishment—and lastly, the executioner doing his dreadful duty amidst the approbation of the multitude. I say when we think of all this, is it not enough to make us shrink from our very selves, and to ask, where

is the superiority of what is called learning over what we designate ignorance ?

But all is not yet told. Those laws were passed by a numerous body—the very first class of commoners, chosen as the representatives of a great nation, with the concurrence of three hundred noblemen, whose rank, descent, education, and fortune placed them, in this instance certainly, above any views beyond the public good, and the monarch gave assent with equal sincerity. It cannot be denied, that all the learning of the country heartily agreed in the necessity and wisdom of those laws, and they were in active operation less than a century and a half past, for they were not repealed until 1736. We are to keep in mind too, that similarly *wise* doings were going on, about the same time, in France, and elsewhere on the continent, and, when we inquire the reason for such sanguinary proceedings, we find it to be, that all learned, intelligent and equitable men believed in the power of a silly old woman to inflict serious injuries on whomsoever she pleased, by the agency of Old Nick, or of other evil spirits !

After this sample, will the Aristotelians insinuate, that the concurrence of the learned is any proof that what they advocate or encourage must be right ?

But you will naturally ask, how are we to know at all what is right, if we are not to believe what the whole learned world advocate ?

The question appears to be startling, but it is no more alarming than the bellowing of a bull, or the braying of an ass, which no way frightens us, though it would seem terrible to those who heard it for the first time. We are not now as they were formerly. Our state or condition is greatly altered, and I must premise that the change is entirely owing to Bacon. Some part of it may be referred to printing, but, without him, that would have been only a feeble assistance in dispelling long established errors. He first taught us to insist on evidence, and that struck a deadly blow against general acquiescence in delusion. This is the reason why your would-be philosophers are so hostile to him. They hate him because he opened the eyes of the vulgar, who, without knowing a word of Greek or Latin, have now the impudence to ask them for proofs of their most profound speculations or assertions. "The learned all believe it" has no longer its former weight, and is it any wonder that they should be incensed against him who drove them, unceremoniously, from their dignified monopoly of knowledge, and enabled plain men to question the infallibility of their decisions?

Believe me that you need not, from my "Receipt," conjure up any fears about the difficulty of judging aright. There seems no likelihood whatsoever, that the learned can ever again sway the world, or plunge it into that deplorable state of delusion which they formerly accomplished. Their supremacy is now, happily for us, effectually invaded, and so many checks and balances

are thrown in their way that they can no longer act arbitrarily. Yet those literary despots were always talking of "the republic of letters," for you will find that expression in very old books, whereas the truth is that literature was not a republic, properly speaking, till the present century, nor has it even yet a free constitution. You may rely on it that the learned can never again do the injury that they formerly did. To be sure they must always have some hobby, such as craniology, which they have been, for twenty-five years, striving to bolster up into a science. But all will not do, though they have changed the name to phrenology, and enlisted the medical *world* at their side. They cannot now hoodwink as they used in the "good old times." That means the times of implicit obedience to them, and which they are constantly extolling, but, alas for them ! those times will never again return. Do not you perceive constant sarcasms against the March of Intellect, and the School-master abroad ? Every blunder of the illiterate, and every specimen of bad spelling, is now paraded under those heads, but neither this, nor any other, manœuvre can arrest the spirit of *vulgar* inquiry.

But what greatly, I may say effectually, secures us against the frightful deceptions of former times is the opposition amongst the learned themselves. They may be divided into the Old and New school, and these again into two other classes or descriptions. The first comprises the worshippers of Aristotle, and those who know

nothing of him, but who naturally follow peripatetic *philosophy* out of pure conservative instinct. They are, of course, much attached to high and unprofound speculations, are great lovers of antiquity, and of old proverbs howsoever contradictory to each other, and would generously save us the trouble of thinking, by doing that for us themselves. The new school comprises those who have read or looked into Bacon, and those who have not, but who have caught the spirit of his scrutinising logic, and are prone to ask explanations of what seems unintelligible—a thing hated by the old school. Now between those two parties, who may be generally regarded as Aristotelians and Baconians in spirit, we are tolerably safe. For if they sometimes prevent, by their collisions, unanimity in a sound doctrine, there is no chance of that extensive and *obedient* agreement in gross error which formerly prevailed. The probability of discovering truth is now, comparatively, increased a thousand fold. While I admit that there are still many absurd notions too generally prevalent, and some of which I am almost tempted to mention, we are far better off than they in the times of our ancestors were.

I hope that I have now relieved you from any unpleasant or distracting considerations that may have arisen in your mind, on reading my exposition of the entire learned world agreeing in the most senseless or mischievous doctrines. However, for your further satisfaction, I am happy in giving you the high authority of Locke. 'That

great man has clearly traced the causes of all the mischief done by what he very fitly designates "learned ignorance." He shows that ambition to rule over the multitude was the grand incentive, and that an appearance of superior knowledge was the weapon—that men profoundly ignorant themselves overawed the mass by a jargon of hard words, which they called logic and philosophy, and that the world would have been almost at a stand in real knowledge but for the plain and unpretending. Alluding to what peripatetic impostors called learning, he says :—

"This learning very little benefits society. For, notwithstanding these learned disputants, these all-knowing doctors, it was to the unscholastic statesman, that the governments of the world owed their peace, defence, and liberties ; and from the illiterate and contemned mechanic (a name of disgrace) that they received the improvements of useful arts. Nevertheless, this artificial ignorance, and learned gibberish prevailed mightily in these last ages, by the interest and artifice of those who found no easier way to that pitch of authority and dominion they have attained, than by amusing the men of business and ignorant with hard words, or employing the ingenious and idle in intricate disputes about unintelligible terms, and holding them perpetually entangled in that endless labyrinth."

This is but a very trifling extract, and I must request you to read the whole. It is in the *Human Understanding*, book 3, ch. 10, and the work is now easily procured. The chapter is

entitled Abuse of Words. It throws a surprisingly clear light on the contrivances of those literary cheats who called themselves learned, and by which they so miserably deluded the unsophisticated world. If you cannot go through the entire, let me entreat you to read from section 5 to 17, only about eight pages, and you will gain most valuable information on a subject of the highest importance.

As a further proof of what the learned have been always doing for our *benefit*, look well to the following ominous fact. It is taken from Locke's life, in Woodfall's edition of his works, London, printed 1768:—

“This work [Essay on the Human Understanding], which has made our author's name immortal, and which does honour to our country, gave great offence to many people at the first publication. It was proposed at a meeting of heads of houses of the University of Oxford, to censure and discourage the reading of it; and after various debates among themselves, it was concluded, that each head of an house should endeavour to prevent its being read in his college. The reason of this is obvious; Mr. Locke let in more light upon the minds of men, than was consistent with the dark designs of some persons.”

What an abominable scheme this! We hear a great deal about combination among artisans, though it is only to raise their wages, but here we have one of the most villanous nature imaginable. It was a conspiracy against the spread of knowledge—nothing less than high treason

against the diffusion of light. Locke exposed the foul designs of "learned ignorance," and for that he was to be crushed by a vile conspiracy of our university *teachers* ! Happily this base plot to murder science did not succeed. Locke's work made so much noise abroad that those professors, who planned its destruction, were obliged, by the force of public opinion, to take it in, and were reduced to the mortification of sending a mean and cringing request to the author for correct copies of his invaluable writings. What a humiliating submission to one who despised them ! Locke graduated in Oxford, and publicly declared his opinion of that "seat of learning" thus, as recorded in Woodfall's edition, "He often said that what he had learned there was of little use to him, to enlighten and enlarge his mind."

But, as that occurred a long time ago, you will perhaps say that such things could not be attempted now. Grieved I am to be of a contrary opinion. They are attempted as far as is practicable—the same crusade against real enlightenment is still maintained. Why do our colleges prefer Aristotle's trumpery logic of words to Bacon's rational system of reasoning ? Because Aristotle's keeps down sifting inquiry, while Bacon's "lets in more LIGHT upon the minds of men, than is consistent with the DARK designs of SOME PERSONS."

SOME ADDITIONAL REMARKS CONCERNING THE HEATHEN MYTHOLOGY.

With respect to what I have said of the heathen mythology I must observe, that it is only a small part of what I had designed for a separate essay. I intended to take a general review of that religious system, and to prove, by undisputed facts, that it influenced the notions, and the conduct, of its professors much more powerfully and extensively than is commonly supposed. Very able writers are puzzled how to account for some of their proceedings, when they recollect their high state of polish and refinement. Those of the Greeks, in particular, were often so extraordinary that they appear quite unaccountable, and to argue a want of even common sense. They banished or put to death their most virtuous men, they rewarded vice, and they tried and punished their generals and magistrates for rendering real services to their country. On the other hand, they sometimes gave noble instances of just discrimination and a proper estimation of merit—so that they appear to us like a community of men who had only certain intervals of reason.

Sometimes, perhaps when they reflected on the infamous character of their deities, they treated them with contempt—anon they became afraid of their vengeance, and offered them splendid propitiatory sacrifices. Their greatest men were commonly suspected of “irreverence to the

gods," and lived under continual apprehension of prosecution, for Aristotle himself was obliged, at the very close of his life, to fly his country precipitately to avoid a process of that kind. They were, collectively taken, a mixture of discretion and folly, justice and injustice, deliberation and phrensy, mercy and cruelty, patriotism and tyranny, learning and ignorance, modesty and arrogance, confidence and superstition, moderation and intemperance, prudence and impatience, loyalty and sedition, refinement and barbarity—in a word, a compound of virtue and vice such as seems quite incompatible with that high state of civilisation which forces admiration from the most reluctant, and which enabled a handful of men to maintain their liberty against the mightiest efforts, and to scatter armies whose mere pressure alone seemed sufficient to crush them.

Now I intended to trace all these discrepancies to their incoherent religion, which left them without any fixed guide to distinguish between right and wrong. But, having embodied so much of my design in the preceding article, I must give up all thoughts of a separate essay on the subject. I have not, however, much to regret on that account, as I strongly doubt my ability for the task. It would require the penetration and the learning of a Niehbuhr, and I gladly leave it open to others who may feel themselves adequate to the undertaking. But I hope that the hint may not be lost. Such a work would be very useful to correct the erroneous notions, not only of youth but of mature age, on a subject of great

importance. For, while we are impressed with the common notion that none but the lower orders believed in this mythology, it is vain to think of reading Greek and Roman history in its true light.

As a corollary, I intended to institute a comparison of christianity with other faiths, and to show that, notwithstanding all the calamities and bloodshed that it has occasioned, it is the only consistent system of religion, and the only one that can lead to true morality or civilisation. This I intended in order to satisfy unbelievers, or those who think lightly of christianity. Even the devil, of which sceptics make the greatest handle, is perfectly consistent, and quite reconcileable to the most latitudinarian philosophy. That we should be tempted to evil is surely quite rational, while we are taught that the tempter can have no power over us, if we put our trust in God. Here is our moral free agency fully established—insomuch that the strongest arguments of predestinarianism are but a feeble opposition. Our God is all powerful, all justice, yet the extent of his clemency is inconceivable by us. Compared with this, how utterly contemptible is the wretched heathen mythology, where the half-omnipotent Jupiter, though dubbed “almighty,” is constantly controlled or annoyed by other gods, or by his termagant sister-wife, and where he is represented as sometimes tampering with the Fates in order to delay predestined events !

Then as to Christ, I intended to show by dif-

ferent arguments, and particularly by two which appear to be as yet untouched, that to believe in his divinity can be no possible humiliation to reason, and that those who pretend, by its denial, to be the more enlightened, evince more inconsistency and weakness of intellect than we who admit it to the fullest extent. Such considerations, however seemingly extraneous, I deemed necessary for elucidating the absurdity of the heathen mythology, and for exhibiting the folly of any attempt to depreciate the doctrines of christianity. They are the finest code of morality that can be even imagined by the most fanciful philosopher, and they have this strong recommendation, that they are perfectly practicable. If christian nations do not follow them it is, therefore, their own fault, and it only unhappily proves that we are more inclined towards evil than good—to be vicious more than to be virtuous.

It is too true, that the heathen mythology has never been reprobated as it deserves. Our admiration of the Greeks has kept our reason in check. Do we not suspend our very senses when speaking of their poetry, and its *chaste* “machinery?” Volumes have been written on that said machinery, and yet, soberly examined, it is a thing of but little merit. No great genius is required where gods and goddesses, of various views and dispositions, are always at hand to save a hero from a deadly blow, to interpose a mist, or unnerve the arm of a powerful antagonist. We have ourselves produced specimens

of poetry more meritorious than the *Iliad* or *Æneid*, if we consider that we cannot use this accommodating machinery, and that our language is rude compared to the refined state of Greek or Latin. No machine of Homer or Virgil has so much merit as a scene in Voltaire's *Mahomet*. It is where Zaphna is just going to kill him, when he is suddenly arrested by the poison which the wily impostor had secretly administered in his food. The divine protection here seems quite natural. Tumult subsides into reverential awe, and furious enemies are instantly changed into servile adorers. The dying Zaphna himself believes that Heaven interposed, and yet there is nothing marvellous throughout.

But we often read, in our classic enthusiasts, of "this beautiful mythology." Is not such thoughtless praise calculated to give us a wrong notion of it altogether? A heap of absurdities despicable by their incongruities, revolting by their wickedness, or disgusting by their indecency—such a mass of deformity, I say, to be represented as "beautiful!" Truly it is high time that our youth should be better instructed, than by instilling into their minds such anti-christian ideas which, like ghost-stories told in childhood, leave an impression too deep to be effaced in mature age.

I find that M. Rollin examines that absurdity of paganism which I have treated, and the inconsistency of the Greeks with respect to its observance, and he comes to the curious conclusion that they had a kind of double religion!

He says that they were no way concerned about the lives or actions of their gods, which they freely allowed to be ridiculed. In proof of this he adduces Aristophanes, whose plays were constantly acted, and with great applause, though they turned those gods into mockery. But it was very different with respect to their "oracles, augurs, offerings, and sacrifices." These he says were their *real* religion, and any contempt or neglect of which they punished severely, even with death itself, as in the case of Socrates and others. It was "by this standard," he says, "that they regulated their *piety*," and against which they would not suffer any attempt whatsoever, but there was another religion founded on fable and fictions, "for which they were little concerned, and abandoned it entirely to the poets, to the representations of the theatre, and common conversation."

Now really this looks something like a desire to rescue the Greeks from the charge of religious absurdity. For, in speaking of their sentence against Socrates, he says:—

"From whence could so evident, so universal, and so determinate a contradiction arise amongst the Athenians? A people abounding in other respects with wit, taste, and knowledge, must, without doubt, have had their reasons, at least in appearance, for a conduct so different, and sentiments so opposite to their general character."

It is after this that he goes on to explain their *double* religion, but I would ask, why not

at once refer such monstrous proceedings to the nature of their abominable mythology? We need nothing else for a sufficient explanation. Could we reasonably expect any consistency under a system of "piety" so vile, so revolting, and so detestable? No. Rollin could have found a much easier mode of solving what seems to him a riddle. He had only to suppose a christian government that allowed Christ to be ridiculed "in common conversation, by the poets, and on the stage," and his miracles and other attributes to be there held up in derision, while death awaited those who had not demure faces in church, or who did not observe the duties that our Saviour enjoined. Would not he think such a government, and such a people, execrable for their inconsistency? I think he would, and further that he would be at no loss to account for any monstrous proceedings in their public acts or councils, for he was I believe a man of sound religion, as appears from his occasional moral reflections. But this anxiety to redeem the Grecian character infallibly leads us to absurdity, and it absolutely deprives the learned of clear vision. Is it to our credit that we admire the representation of Medea's butchery of her children, or the horrid feast of Atreus? No doubt we should scout them were they of English or French origin, but, being specimens of Grecian "wit, taste, and knowledge," we only evince our classical judgment by introducing them on our stage. Most of the Grecian tragedies have, indeed, little to recommend them but the beauty of the

language, and yet our critics lose themselves entirely in admiration of the *story*. But, to say nothing of an Œdipus or such characters, let me ask them calmly, in some interval of their transports, do they think, if a modern were to write Philoctetes, that it would be endured? A man with an ulcer on his foot, emitting a fetid stench “enough to knock down a horse”—poh! the bare idea is disgusting, without speaking of the *wisdom* of Ulysses which is here both immoral and contemptible. Yet the Rev. Dr. Manwaring, who ranks high as a critic, calls it “a beautiful drama,” and praises it so highly, that one is inclined to think that he regarded it as the best of the Grecian theatrical productions. Fenelon is so enraptured with it, that he makes it the subject of a long episode in his *Telemachus*, but, in order to save the wisdom of Ulysses from contempt, he represents him as giving a sign to Neoptolemus to restore the arrows, while Sophocles makes him resist to the last.

Let it not be imagined that I wish to throw the classics aside. Nothing is farther from my thoughts. I only desire that they should be read with a proper estimation of their merits and defects, but no one can say a word against them without being assailed as a barbarian. Yet, in the face of this malediction, I am not afraid to ask, is not the *Odyssey*, taken altogether a most contemptible story? There we can fully estimate Grecian notions of wisdom, justice, clemency, and general morality. It was the

production of Homer's old age, when his fire had abated, as Longinus observes, and when he perhaps began to think of "making his soul," and it is, on that account, the more valuable for our purpose. To pass the merciless slaughter of the suitors, the punishment of the offending handmaids is shocking, and as for that of Melanthus, it is revolting even to decency. It comes near to that for high treason formerly in England, which probably was suggested by this classic model. The Odyssey is, altogether, an outrage to our present ideas of moral conduct, and cannot but be injurious to youth who read it as a beautiful poem, describing the life of "the wisest of the Greeks," by which, from the commentaries in praise of him, they infer the wisest of mankind. His conjugal fidelity is an admirable pattern for some modern husbands, though it may be right to give their wives a hint, as they have all heard of the chaste Penelope, but are generally ignorant of her worthy spouse's doings in the opposite way. It is proper then to inform them that the sage Ulysses, when away from his faithful rib, freely "went to other people," and that, to comfort himself for her absence, he slept every night, during a whole year, with Circe, a much younger and handsomer woman. But he would kill herself, as he did her suitors, if he found that she had been unchaste. Let wives have an eye to this, I say, for it is the conjugal morality that is taught and praised throughout *classical* literature.

The Odyssey used not to be read in college,

on account of its epic inferiority to the *Iliad*. Yet, as if the dragging of Hector round the walls of Troy were not sufficient to sound the praise of ferocity, the Dublin University not long since introduced, probably in imitation of Oxford or Cambridge, four books of it in ordinary, and three for honors. This makes the course of classic morality complete. In the *Æneid* we have a picture of Roman piety by the astute and cautious Virgil, for he constantly calls his hero "the pious prince." His cavalier treatment of Dido after a sham marriage, his heroic indifference on seeing the smoke of her funeral pile, and his killing the suppliant Turnus to appease the manes of his friend Pallas, are "beautiful" specimens of both piety and mercy. Even Horace himself, who is so madly bepraised by schoolmen, strongly exhibits the barbarian in his notions, but I cannot now stop to review his writings, and shall only just mention his brutal ode to Lyce.

Of what the Greeks and Romans deemed moral and religious men, we cannot desire a more faithful picture than the *Odyssey* and *Æneid*. Yet the heathen mythology has found innumerable christian excusers or defenders, in pure zeal for the justification of a people who had carried poetry, learning, the fine arts and politeness, to a surprising extent. But why attempt to defend what was evidently bad, and which plainly produced the most vicious effects? Cannot we admire their language, architecture, sculpture or patriotism, without striving to

palliate their senseless proceedings arising from a senseless religion? All school or college classics should be illustrated by English explanations, pointing out the gross notions and absurdities of the ancients, but there seems to be a fear, that the young student's admiration of those "chaste models" might be diminished. It is, however, a very injudicious fear. At all events, I have done my duty in suggesting a counteraction to this evil, and I shall now show how it may be the more easily accomplished.

Take for example Homer and Virgil. Instead of running notes, which distract the attention, let each *book* be preceded by what I would call a MORAL ANALYSIS in English, in which the student should be regularly examined. This would be very little additional labor, and, for its greater diffusion in education, it should also be required in college entrance course. By that means it would be spread through the schools, and the false notions generated in youth, from an unguided admiration of the ancients, would be chastened down to a proper estimation in accordance with christianity.

It is vain to defend what is radically bad. Some imprudent friends of Lord Bacon have striven to extenuate his private conduct, but I never read one of those attempts, not excepting even that by the shrewd Addison himself, which did not appear flat and unavailing. It is right, however, to observe, that Bacon cannot be accused of defending what is bad. *He* saw no "beauty" in the heathen mythology, though the

learned of his time praised it extravagantly. Touching on Divinity, towards the end of his Adv. of Learning, he says:—

“And therefore the heathen religion was not only a worship of idols, but the whole religion was an idol in itself, for it had no soul, that is, no certainty of belief or confession; as a man may well think, considering the chief doctors of their church were the poets: and the reason was, because the heathen gods were no jealous gods, but were glad to be admitted into part, as they had reason. Neither did they respect the pureness of heart, so they might have external honor and rites.”

The marrow of all my arguments are summed up, as it were, in this concise description. I shall therefore conclude by once more remonstrating against our present educational system, as regards this anti-moral mythology. It is a paramount duty to consider the rising generation. That a change must take place is certain, but are we to let posterity be laughing at our conservative folly and superstition? This debasing mythology, and classical literature in general, have been too long held up under false colors to youth—let the present age have the merit of undeceiving them, and not suffer future times to claim that honor.

Though I am sensible of being unequal to this subject, I quit it with reluctance, for I have only

just begun my investigation. But though not, strictly speaking, a digression, I feel that I have said too much on what should be a matter of separate discussion. Nothing calls more loudly for reformation—certainly nothing connected with literature. The *story* of classic lore requires an entirely new exposition. Without that, education must remain most lamentably defective and unchristian. It cannot be otherwise while we train up youth to admire relentless slavery of our fellow creature, insatiable revenge, contemptible wisdom, revolting cruelty, parental unfeelingness, perverted notions of suicide, virtue and morality, and, to crown all, a logic opposed to probity or philosophical research.

SLOW PROGRESS OF BACON'S LOGIC.

This is the most painful, though a very important, part of our subject. After having heard and read so much of the 2,000 years of mental slavery, you would think that, when Bacon's *Organon* appeared, or shortly after, Aristotle's syllogistic theory was laid aside. I have, however, gradually prepared you for the contrary by various observations dispersed throughout this treatise, and I regret that I am now obliged to tell you plainly, that greater efforts than ever are making to throw Bacon aside!

And by whom are those efforts making? By antiquated dunces, you will guess, whose exertions can signify nothing in these enlightened times. No, but it is by the learned! Know then

that the colleges of Oxford, Cambridge, Dublin, and in short all our great universities, have been, for many years past, sedulously endeavouring to bring Bacon's admirable system of induction into disrepute, and that they have at length thrown off the mask, and openly declare that it is not logic at all, nor in any way concerned with the art of reasoning. This indeed is what they have been doing for the last two centuries, for all their books of instruction on logic have either passed it by entirely, like those by Walker and others, or have mentioned it contemptuously, as a thing almost beneath notice. But the high encomiums bestowed on it by men of liberal minds and unquestionable erudition, in various publications of the first respectability, particularly during the last twenty years, having made a deep impression, the colleges, those strongholds of old doctrines whether right or wrong, have been forced to notice it, and that is by pronouncing it to be "out of the province of logic."

Trinity College, Dublin, will do as well as any other to explain this, for it takes its *tone* from the "mother country," and there is not much difference in its general routine from the English and Scotch universities. In 1833, when considerable changes were contemplated, there was a kind of temporary suspension of logic, and a rumor prevailed that it would be no longer taught on the old plan, and that Bacon would be substituted. The next year, however, saw Murray's logic brought in, with the addition of Whately's—and the ancient syllogistic system,

so justly condemned by the voice of truth and reason, is now firmly established as being the best for instructing the rising generation ! It is true that a small portion of Bacon was then, for the first time, admitted, but special care was taken to exclude even that fractional part from the general course—it being solely reserved for the few who read for Moderatorships. Yet the Dublin university is held to be more liberal than that of Cambridge, and far before Oxford, in point of enlarged views.

There is no necessity to say any thing of old Murray. His work is, like all other college books on logic, completely Aristotelic, but that of Dr. Whately, now archbishop of Dublin, being one of the latest, and in great university estimation, is of too much importance to be passed without observation. His grace's book consists of 392 pages, including a great deal of small print, and how much do you think is devoted to induction ? Only $6\frac{1}{2}$ pages ! He would evidently, like his predecessors, have left it unnoticed, only for the noise that it has latterly made. Read now what he says. He is adverting to the inaccuracy of writers on induction and the syllogism :—

“This inaccuracy seems chiefly to have arisen from a vagueness in the use of the word Induction, which is sometimes employed to designate the process of investigation and of collecting facts ; sometimes the deducing of an inference *from* those facts. The former of these processes (viz. that of observation and ex-

periment) is undoubtedly *distinct* from that which takes place in the syllogism ; but then it is not a process of *argument* ; the latter again is an argumentative process ; but then it is, like all other arguments, capable of being *syllogistically* expressed."

Observe how strenuously his grace labors to depreciate induction. He admits that one part of it is an argumentative process, and surely that is a wonderful admission from a college logician, but then, as it is "capable of being syllogistically expressed," he speaks as though it were hardly worth notice in comparison to the syllogism, with which his book is for the most part occupied.

His grace says that it is a fallacy to call induction a distinct kind of argument from the syllogism, and further :—

"Induction, therefore, so far forth [quatenus—how beautifully logical !] as it is an *argument*, may, of course, be stated Syllogistically ; but so far forth as it is a *process of inquiry* with a view to obtain the premises of that argument, it is, of course, out of the province of Logic."

You see how industriously he works to disconnect induction from logic, and at last he drives it, by clapping his shoulders manfully to the wheel, entirely "out of the province" altogether. But, after slightly adverting to the nature of the inductive process, he says that it is

"A process by which we gain, properly, new truths, and which is not connected with Logic ; being not what is strictly called *Reasoning* but *Investigation*."

Admirable ! So then a process by which we gain new truths has nothing to do with logic ! Would you now think that Dr. Whately was really serious, or would not you rather imagine that he had made an unlucky slip in his warmth against induction ? Why this is an entirely new description of logic. All our peripatetics used to admit, and even Dr. Watts, whose Aristotelianism it would be cruel to doubt, admits logic to be "the pursuit and acquisition of truth," but, as *new* truth is not mentioned, there may be a great difference between old and new truths in the estimation of Dr. Whately. We have it, however, very particularly asserted by him, that logic has nothing to do with the gaining of new truths. Does he mean that induction discovers new truths, and logic old lost ones ? We can hardly suppose that, for it would be making almost a caricature of logic. Does he mean then, that logic has nothing to do with the discovery of truth ? That is what he means, for he inveighs against the common *error* in calling logic a means for the discovery of truth, and he takes no small pains to represent it as only a process of argument. Now that is reducing it to a very humble rank, since it then becomes nothing more than a weapon with which, by skilful management, you may defeat an adversary, or at least give him no 'vantage ground. By this he pays the highest possible compliment to induction, though we are certainly under no obligation to him for it—any one can see that it came out in his excessive veneration for the syllogism.

Logic, that is syllogistic logic, is then, according even to Dr. Whately, only an argumentative, or otherwise a disputative, process, while induction is one that discovers truth. Consider that well. Logic will enable you to conduct an argument, but it does not pretend to discover truth—if you aspire to that, you must have recourse to induction. Think well on that also, for I assure you that it is very important, coming as it does through Dr. Whately. But then he says, that induction is “not what is strictly called *Reasoning but Investigation.*” He thus teaches that induction, which he admits develops truth, is not reasoning, i. e. that reasoning is not necessary for its development, or, to prevent any cavilling about words, for its discovery. Did you ever think before, that the discovery of truth was so simple as to require no reasoning? Philosophers have been, since the earliest ages of literature, striving to discover it, and so difficult did this appear that many, in complete despair, made up their minds that there was no such thing. What pity that they did not know induction! But college logicians will tell us that it was always known. Why so it was, just as the syllogism was known before Aristotle, though he claims, and very justly, the invention, since it was lying nearly useless, like iron in the mine, till he developed its use. In the same manner, induction was unknown, with reference to its value, till Bacon unfolded its great powers, and showed it to be the only engine, save chance alone, capable of

dislodging truth from concealment. The attempts to depreciate induction, by covertly robbing Bacon of its invention, are contemptible—they exhibit only a disposition, not a power, to inflict wanton injury. Aristotle might be more fairly deprived of the syllogism, for it was actually used by other logicians before he published his celebrated analysis, but would not one evince great folly in decrying it on the grounds that it was not Aristotle's invention?

But Dr. Whately's assertion calls for still a more strict examination. He says that induction will discover truth, though it is not reasoning. Now a regular process that seeks, from the beginning, to discover some truth, and that ultimately succeeds, must include reasoning, for induction is not the accumulation of facts and instances, throwing of them into a heap, and then saying, "there! contradict them if you can." It requires a great exercise of both the reason and judgment. Simple as it appears, it cannot be used effectively without following Bacon's rules implicitly, and they are sufficiently extensive to demand a profound and laborious study.

Dr. Whately's description of induction seems to be, upon the whole, fairly entitled to be called a paradox. But suppose we take it in its strict meaning, that induction is no use in argument—even there no one need be afraid to meet him. He has told us too plainly to be mistaken, that induction has no chance in contention with a syllogistic opponent, where argument is concerned, and I think that he will himself admit,

that this is the sum and substance of his inculcations on the subject. A common example, for I can give no other, must serve for a trial. There are some bible-mad folk who insist, that the *whole* sacred volume should be put into the hands of every child who can read, without the least restriction as to any part for perusal, and, when others object to that, they assail them with "Is it not the word of God?" and "Can you deny that it is all the word of God?" Being answered with a Yes and No, they then cry "Can the word of God teach any thing improper?" Having got their answer No, they then come down with their *ergo* "it should be read by all who can read." Now I will suppose those questions to be arranged in due syllogistic form, with unimpeachable premises and conclusion, and what would they avail against simple induction? Nothing—I distinctly repeat nothing. What! Are we to be frightened out of our reason and common sense by a paltry trap, just as Lucian makes Chrysippus say to the merchant, "take care that I do not shoot you with a syllogism?" No surely. I would readily admit the premises, and the conclusion too if arranged, which it might be, without the word *all*, and yet still I should not be convinced. Here is my refutation, or, as lord Bacon calls it, *redargution* :—

There are many passages in the Old Testament highly improper for children of either sex to read. I shall not allude to them, for that would be to needlessly wound delicacy,

since they are already well known, and it is sufficient to say that they chiefly occur in the books of Moses. As I do not wish to hurt any one's feelings unnecessarily, I was going to recall the word "*improper*," and to substitute *useless* or *uninstructive*, but I now find that I cannot. Children are always curious. It is quite natural that they should be so, when reason is only budding. When they meet certain words or sentences that they cannot understand, they ask for an explanation, which any father or mother would blush to give. Is it proper or improper to put such passages into their hands? They are first told that the Bible is the word of God, and that it can contain nothing but what is good, yet, when they ask for an elucidation of some parts, parents are under the necessity of either giving them a false version, or checking them for impertinent curiosity, which is virtually telling them that it is not proper for them to know the meaning.

Every one admits that the jews have been always singularly exact with respect to the Old Testament. So tenacious were they of its purity, and so anxious to preserve the text from any the slightest corruption or innovation, that they counted not only the words but the letters composing the entire. This would argue that they regarded the minutest portion as of the highest importance, yet there were some parts which they would not allow of being read by any of the male sex before thirty, and by females NEVER. Jews may be no examples for

christians, but we may, in some instance, draw instruction from even pagans, which is constantly done by our first writers when speaking of the ancient Greeks and Romans.

For conciseness' sake, I hasard this little defence, as a sample of an inductive, or, if it please better, an investigative, answer to the syllogist, though I might further strengthen it by numerous arguments, facts and instances. What can his little catches avail against plain reasoning? Does he think that, because I admit his general positions, I am necessarily obliged to yield up mine? Nothing appears to me better calculated to show the contemptibleness, and, I am forced to add, the dishonesty, or, perhaps more appropriately expressed, the treachery, of his weapon. He allures me into certain admissions, and then he glories in his achievement, like him who basely inveigles another into a bubble bet. But he has, in reality, no victory, except in the eyes of his wretched brother tacticians. All honest men, who should hear us both, would pronounce him to be defeated.

The influence and power of universities are prodigious. We may say that they have, in a general sense, the education of the respectable male population either directly in their hands, or under their control. All our schools, except those confined to plain English instruction, are regulated by them, because they must follow what is called the "entrance course," otherwise they would lose their business. No master can, therefore, prudently teach a different doctrine

from what is sanctioned in college, and hence the logic that is taught in schools must be the same. Here you see ample cause for the slow progress of Bacon's logic.

I recollect reading in Chambers' Journal, that encyclopædias take twenty years to decide on an obvious improvement, and colleges fifty. But there are some cases where the latter require whole centuries, e. g. Bacon's logic. It is a common saying, that learned bodies move slowly, and I believe that they are almost everywhere the same. The French academicians took upwards of half a century to decide on Voltaire's *a* for *o*—the greatest improvement that was ever made in the orthography of any language. They did not make up their minds on its *safety* till 1820, when they were at length laughed into consent by finding themselves standing alone, for nearly all France besides had adopted the new spelling even in the previous century. There is indeed, generally, a most ridiculous fear of any thing like literary *innovation*, which I think is traceable to university conservatism. Even sensible men fear to advocate what tardy colleges do not sanction, and I hope that I may be allowed to give an instance wherein I am myself concerned. I was the first to notice, in my work on Composition and Punctuation, the absurd custom of mixing up I and J, and U and V, in our dictionaries. What can be more ridiculous? Every one hates to look for any word under those letters, because they are so puzzlingly jumbled together,

and yet, though every one desires their separation, our lexicographers are still afraid. Afraid of what? Why of conveniencing *all* their readers! Only a few have *ventured* to adopt my suggestion, which has given great satisfaction, and I have no doubt that it will yet be universally followed, though not probably till the present generation has passed away—unless indeed that the colleges should sanction it, and then all *fear* would quickly vanish.

But you will naturally ask, why do all those learned men, who write logical treatises, advocate the syllogistic theory? Because they all write with a view to their adoption by the colleges, for they are read no where else. If the author be a man in humble or middling circumstances, that is a fortune to him, and, for one to whom any profit on the sale of his book would not be an object, there is that great incentive *fame*. There can hardly be a higher gratification to a literary man, than to have his work entered in a college course. It must be felt to be conceived, and it has sometimes induced men to write against their own principles and conviction. Indeed it has sometimes affected the reason—an instance of which I could mention, but I suppress any account because it might give pain to the friends of the individual.

You may ask too, why so few eminent authors have written against the syllogistic theory. The reason for this is twofold—they regard it as hopeless on account of the public apathy on such

occasions, and they do not choose "to attract a swarm of hornets about their ears." No great writer ever yet exposed the inanity of syllogistic *reasoning* without being tormented by its buzzing defenders. Great writers have always an extensive acquaintance with the heads of colleges, who are all professed Aristotelians, and they do not like to offend them, which they undoubtedly would if they wrote against what is taught by them. They content themselves, therefore, by secretly despising it, and following Bacon in reality as their guide. Few have the courage to encounter this hostility like a Locke, a Kaimes, a Campbell or a Stewart, and fewer still have the manliness of Dr. Reid, who, though an ardent admirer of Aristotle, exhibited a rare example of integrity by combating his own prejudices. But let the colleges once declare for Bacon, and we should then be astonished at the number of able writers who would break through their *spectatorial* silence, openly proclaim their sentiments, and denounce syllogistic logic as a waste of time, a grave delusion, an empirical farce, an impudent cheat, a literary bugbear—in one word a humbug.

Yes we should then be astonished, and so would Dr. Whately himself, at the number of able opponents of syllogistic logic. *Convenient* opportunity alone is wanted. Nor can our really great men bear the thoughts of teaching this degrading and equivocal system, as we see in the instance of Dr. Adam Smith, author of the celebrated *Wealth of Nations*. In 1751

he was elected Professor of Logic, in the university of Glasgow, and the year following he was removed to the professorship of Moral Philosophy, in which situation he continued thirteen years. But why was he removed? Because he could not bring himself, in justice to reason, to teach a system that distorted reasoning. This is plainly seen in the following, which was written by one of his pupils, and which Dugald Stewart gives verbatim in his life of Smith:—

“In the professorship of logic, to which Mr. Smith was appointed on his first introduction into this university, he soon saw the necessity of departing widely from the plan that had been followed by his predecessors, and of directing the attention of his pupils to studies of a more interesting and useful nature than the logic and metaphysics of the schools. Accordingly, after exhibiting a general view of the powers of the mind, and explaining so much of the ancient logic as was requisite to gratify curiosity with respect to an artificial method of reasoning, which had once occupied the universal attention of the learned, he dedicated all the rest of his time to the delivery of a system of rhetoric and belles lettres.”

Here we see plainly the cause of his quick removal from the chair of logic. It was not for want of the requisite knowledge, for he had studied the ancient logic deeply, and metaphysics too, as is shown in his writings on those subjects. The fact is that, as an honest man, he would

not teach such a mind-debasing thing as syllogistic logic, and accordingly he was removed to make way for those of a more pliant and unscrupulous spirit.

It is proper here to remark, that Dr. Smith was a philosopher of very enlarged understanding. He wrote several works, evincing a profound acquaintance with classic literature, and his *Wealth of Nations* has been translated into all modern languages. Although the first, it is still the best, treatise on Political Economy, though subsequent writers on the subject endeavour to depreciate him, by industriously pointing out some errors into which he was led, more through want of instances to aid him than of judgment. Time having furnished those proofs, they affect to despise their great master, and yet, though they have the assistance of sixty years' additional experience, and which, particularly the last five and twenty or thirty, include the most enterprising commercial periods ever known, their speculations are, for the most part, either visionary or too hasardous for practice. They seem to forget entirely that there are very few, perhaps not more than half a dozen, fixed principles in political economy—that the peculiar circumstances of a country and its people call for different views—that what would suit one nation will not another, and that, even in the same country, what would be highly beneficial at one time must be extremely hurtful at another period, according as she advances or retrogrades in power or influence. But they are blinded by

the ambition of being philosophers, and they scorn at any thing but generalization. They aim at showing their amazing profundity by laying down rules applicable to all, and they and their books go regularly down together into the common gulph of oblivion.

I do maintain what I said elsewhere, to which I cannot now conveniently refer, that the syllogism is far inferior, as an argumentative engine, to induction, and further, that it is inferior as a process of reasoning, even fully admitting Dr. Whately's distinction between "reason" and "reasoning." It is incumbent on me to be very plain, for every one must confess that his grace is remarkably candid. In that respect he differs widely from his predecessors who, in many instances, seem to imitate the obscurity of their great peripatetic master, but Dr. Whately is every where clear, intelligible and decided, and never uses ambiguous words or phrases, from which two meanings might be drawn, but boldly declares his sentiments in perspicuous language. I say then, that the syllogism is an indifferent process of reasoning compared to induction, which he describes as being *only* investigation. It appears to me, however, that he is somewhat too metaphysical in his description of logic. If it do not pretend to discover truth, may we not ask, of what use is it in reasoning? Any process of reasoning, describe it as we may, has for its object the detection of error, and that is virtually the development of truth. What is an attempt "to obtain the premises of an argu-

ment" but an attempt to discover whether they are, or are not, fallacious? though he will not allow it to have any pretensions to discovery neither. In short, every inquiring process must, inevitably, have truth for its object, for even the mechanical process of common arithmetic seeks to find the *true* amount, or required distinctions, of multifarious quantities.

The less complicated any system is, so much the better, and for this reason I am rather unwilling to separate induction from investigation. Yet there seems to be a difference that deserves notice. An argument, syllogistically based, might be overturned by pure investigation alone, i. e., without bringing forward a single fact or instance. But that is only as the case may be, for facts and instances will be sometimes indispensable. Here it is that the syllogist has an advantage. When they are necessary, and when time will not allow us to supply them, he may maintain an absurd doctrine, with the most plausible appearance of victory. *Appearance* indeed, for what sort of victory is it? Nothing more than the triumph of chicanery. Your syllogist is a no-exception man, who rests pertinaciously on his dogmas till they are scattered by the searching process of induction. For, as far as my observation has gone, I never knew a syllogist to defeat, in argument, any one who came properly prepared to meet him by induction.

I do contend that the syllogism is an unmanly weapon. Admitting that we have a

knaveish opponent. are we to oppose him by knavery? Lawyers well know, and we all know, that a dishonest witness will "break down" on an able cross-examination, and what is that but a process of combined investigation and induction? We must certainly agree with Dr. Whately when he asserts that logic, by which he implies the syllogistic theory, is not a method for the discovery of truth.

You may now begin to perceive why Bacon's logic has been retarded. It is too plain. No show, no ornaments, no gaudy trappings. It is downright reasoning—a real exercise of the understanding. Only think how learned two gentlemen appear when discussing, whether a syllogism is in the *figure* of Barbara or Cesare, or whether again it may not belong to the *mode* Celarent or Festino. Why it is enough to "dazzle the crowd, and set them all agape." When we, simple folk, hear them, we are awed into respectful admiration, and we think that they are initiated into profound mysteries which demand superior intellect to comprehend. Can you wonder, when you consider the extent of human vanity, that they fear the being placed on a level with us, and that they consequently hate induction, because we can at least understand what it means? While, on the contrary, college logic is so hard to be understood, that only a few choice spirits ever become adepts in its mysterious secrets. Of this Dr. Whately himself bears testimony. Speaking of Oxford he says:—

“The truth is, that a very small proportion, even of distinguished students, ever become proficient in Logic; and that by far the greater part pass through the University without knowing any thing at all of the subject. I do not mean that they have not learned by rote a string of technical terms; but that they understand absolutely nothing of the principles of the Science.”

What a farce then is this logic! There are generally say about 4000 students at Oxford, and there must be, amongst so many, a number of bright youths. Every one of them learns logic, and yet all, but a mere fraction, complete their studies “without knowing any thing at all of the subject.” And this is exactly the case at all our other universities.

But notwithstanding this formidable hostility, for it is useless to deny that it is formidable, I have great pleasure in acquainting you that Bacon's logic is silently making way, and that the day seems not far distant when, in spite of university opposition, all sensible and really learned men will be ashamed to advocate the delusive, and worse than all, the *dishonest*, system of Aristotle. There has evidently been alarm in the camp for some years past. What else produced Dr. Whately's novel declaration, that logic did not pretend to discover truth? The fact is, that people were constantly asking what it did, and nothing could be shown, while the “amazing success” of the Baconian method is such that, to point out its results, would be, as is observed in the Library of Useful Knowledge, “to give nothing less than the history of

science for the last two hundred years." To silence such *impertinent* inquiries Dr. Whately, therefore, makes the curious discovery, that all his brother logicians have been wrong in representing the syllogistic theory as a method for finding out truth. Do not you see the important object of this? It was to put down those annoying inquiries by announcing, that logic was only a process of reasoning, but that, as I have already explained, is a very poor answer, and will not prevent further inquiries concerning the utility of this truth-disclaiming process. Beyond a doubt, its use appears no where but in treatises on its use! Its very advocates make no use of it now when discussing other matters, and as for the sciences it has been long since discarded from them—experience having amply proved that it woefully retarded their advancement.

This theory of uselessness is manifestly touching on its last days. We may consider the confession of having nothing to do with truth as its expiring speech, though no doubt it will, like the "nine-lived" cat, struggle long for existence. Dr. Whately laments that several experiments tried at Oxford have not contributed towards its resuscitation. Amongst these was, the requiring of its study to be indispensable for testimonials or a sort of inferior honors, but that did nothing. For the professors found that, if they proceeded to real examinations, testimonials would indeed be rarities. You will probably stare at this word *real*, for I suppose that you,

like others who do not trouble themselves much about what colleges are doing, believe that all their examinations are real. I must, therefore, let you into a secret. You must know then, that there is a particular exception with regard to logic. For that, the examinations are only *pro forma*, or a matter of form. The student answers only according to what he happens to recollect, and even where his answers are all wrong, or where he gives none at all, this does not in any way affect his advancement. In the other sciences, or in classics, if he do not answer correctly, he "loses his examination" as it is called, which is not only a great mortification but a disgrace. He is thus put three or four months back, and, if he be not well prepared at the next trial, he is again remanded, and so on till he answer satisfactorily. But experience proved, that strict examinations in syllogistic *mysteries* would dispeople the colleges, and the farce of fictitious ones was, of necessity, permitted.

Another experiment was, to encourage the voluntary study of this hateful logic. By a statute of 1830, candidates for testimonials were allowed their choice of "substituting logic for a portion of Euclid." This appeared to be most flattering. In 1831, twenty-five presented for Euclid, and one hundred for logic! The worthy directors of Oxford were in transports of joy, but alas! their triumph was short-lived. It was found that the candidates preferred logic, because that was only a getting-off-by-heart

affair, whereas Euclid required serious study. The professors thought that they might, in this case, exact real examinations, as the adoption of logic was left optional, but they found that it would be imprudent, though Dr. Whately seems to think that nothing else will revive this half dead science.

Parents may see here how the college time of their sons, for which they pay so dearly, is wasted. They are all obliged to study, or rather to read, logic, which consumes many months uselessly, and, as if that were not bad enough, those who aspire to testimonials are now permitted to chuse between Euclid and this bubble. Such are college *improvements*! Is not this highly reprehensible? Mathematics are universally acknowledged to be of the greatest utility, and yet this phantom of logic that eludes the grasp, and flits away like an ignis fatuus, gets greater encouragement! Again, I remind parents, whose sons have the laudable ambition to obtain university rank, not to overlook those considerations.

Pro forma examinations are injurious to education, and should be left to their proper sphere, the nobility. Perhaps you do not know that a nobleman's son, who is styled in college a *filius nobilis*, is entitled to pass his examinations as a matter of course. The origin of this was probably, that it would be degrading to the order if a peer could not say that he graduated in a university, and therefore every *filius nobilis* can, after the usual four years, demand his degree

of B. A. as a thing of right, whether he merit it or not. Some of them turn out, notwithstanding, to be excellent scholars, for I believe that their fathers can, if they please, insist on real examinations. But this does not at all concern us, and I therefore proceed to what does, which is logic. Suppose that our colleges should determine on *bona fide* examinations in it, what would be the consequences? Why that instead of four years, five, six or seven would be requisite. Or the young men would be so harrassed that their health must suffer. Or the strictness of examination in their other studies must be lessened. Or they would be so disgusted that they would lose a relish altogether for study, and learn little or nothing. Some persons can never be brought to know the difference between youths and children. A child may be forced to learn reading, writing, and even common arithmetic, but it is futile to think of forcing young men to learn what they detest, what they feel that they can never understand, and what they are satisfied, if they did understand, could be no accession of knowledge.

I much regret to see Dr. Whately strongly inclined to the *forcing* plan. He says that logic would rise in estimation, and be studied with real profit, if it were made "optional to those who are merely candidates for a degree, but indispensable for the attainment of honors." The examination might then, he thinks, be a strict one, without any reasonable objection. Indeed! Why what is it that leads to scholar-

ships, moderatorships, professorships, fellowships, and all other distinctions, but the voluntary aspiration to honors? It is that which causes a noble emulation, and is confessedly one of the wisest devices for the encouragement of study, or the advancement of education. But, if the Whatelyan bar be thrown across the path to honors, we shall find few who will aim at them, for their attainment is already sufficiently difficult, and any additional obstacle would operate as almost a prohibition. I must inform you that honors are far before testimonials, which are only like an acknowledgment of superior answering in the usual prescribed course, whereas honors are given for the *voluntary* prosecution of extra studies. They are, therefore, a great incentive to learning, and it would be both unwise and cruel to put any impediment in the way of such a laudable source of emulation.

Wherever this clog on the understanding has been rejected, there we invariably see the good effects. Astronomers were the first to embrace Bacon's system, and their success was commensurate. Every one admits that Newton followed it strictly, and his successors have adhered to the same course. Some deviations have indeed occurred, and they have led to the fanciful and to aerial castle-building, for it is a certain result of an Aristotelian propensity, to engender a dislike towards sound reasoning or solid research. Chemists took up Bacon much later than astronomers, but they made ample amends by the unexampled rapidity of their progress. Botany,

geology, mineralogy, pneumatics, physics, and all the sciences, have advanced proportionably, and have lost the marvellous character, and even metaphysics are gradually becoming less imaginative, and more consonant to reason. Some how or other, though Bacon is not much read or studied, his doctrine has made a general impression, and many men now, who never threw away an hour on syllogisms, argue most profoundly and logically too, though that would appear almost impossible to peripatetic enthusaists.

The only science that antiquity has transmitted to us undebased is the mathematics. Happily the syllogistic theory was found inapplicable to them, and they remained free from those wretched conceits, and those puerile speculations, that so degraded the other sciences. This fact is universally admitted, and can you have a stronger proof of the cankering tendency of that logic which is so lauded by Dr. Whately?

Is it not cheering to see even a little bit of Bacon allowed into our "venerable seats of learning?" Half a dozen years ago Bacon durst not appear inside the hallowed walls, but now a small portion is admitted. How strikingly that shows the force of public opinion! It was found absolutely impossible any longer to resist the clamor outside. To be sure Whately's Mithridate is given as a kind of antidote to the *poison* of Bacon, but, even so, the students will now know that there is such a thing as induction, whether college wisdom allows it to be logic or not, and that same is something.

There is now a *bona fide* overwhelming majority for it. By this I mean when we include those who, for reasons already stated, say nothing against the syllogistic theory.

THOUGHTS ON A NEW SYSTEM OF LOGIC.

What I mean by a new system is only a new arrangement. It seems futile to attempt any novelty in logic. Having at last, after a search of prodigious length, lighted on what appears to be the only rational method, there we must rest.

But, while men have been for ages striving to explain a theory more injurious by far than useful, no one has yet illustrated Bacon ! This is the chief thing necessary, and whoever does it first will earn great honor for himself, and render an important service to the world. We can hardly blame the author for leaving that to others. Nothing is so disheartening as to know that we are writing for remote generations, and I think we should rather wonder, how Lord Bacon had the courage to be so minute in his details. His *Organon* will not, however, be studied as it deserves till it be digested by examples. I find that Dr. Reid has considered this with his usual fairness and judgment :—

“ Most arts have been reduced to rules, after they had been brought to a considerable degree of perfection by the natural sagacity of artists ; and the rules have been drawn from the best

examples of the art that had been before exhibited: but the art of philosophical induction was delineated by Lord Bacon in a very ample manner, before the world had seen any tolerable examples of it."

Those remarks are strikingly impartial, and make us see the value of Bacon in a new light. But he continues:—

"This, though it adds greatly to the merit of the author, must have produced some obscurity in the work, and a defect of proper examples for illustration. This defect may now be easily supplied from those authors who, in their philosophical disquisitions, have most strictly pursued the path pointed out in the *Novum Organum*."

Yes, it may indeed be easily supplied, but, though Dr. Reid wrote that about seventy years ago, no one has yet done it, while the syllogistic bubble has had scores of expounders and editors in that time.

He who undertakes this great desideratum, and I know of nothing in literature more wanted, need give himself no uneasiness about the extent of his work. It must necessarily be too bulky for the purpose of ordinary tuition, but then it will serve as a great store or magazine, whence he or others may draw materials for school books or minor compendiums, while it will itself be a treasury of knowledge for the studious, who wish to explore the genuine sources of reasoning and information. There is no use in concealing that it would be a most laborious undertaking—so laborious, indeed, that we could hardly ex-

pect one individual to attempt its completion. But how could the united labors of the learned be more nobly employed? Can we imagine any work superior to that of teaching the rising generation to detect or avoid false systems—to argue on sound principles—to seek truth with humility yet with a becoming confidence, and to discipline our reason by purging the mind of those prejudices that impair or darken the judgment?

But, besides induction, the Idols must be illustrated by examples. They are the foundations—the very corner stones, of logic. Without them it is useless to lay out any system of reasoning—certainly no *honest* system can be independent of them. Dr. Reid at once saw their great worth, and, though engaged specially upon Aristotle, he says:—

“ I think Lord Bacon was also the first who endeavoured to reduce to a system the prejudices or biasses of the mind, which are the causes of false judgment, and which he calls *the idols of the human understanding*. Some late writers of logic have very properly introduced this into their system; but it deserves to be more copiously handled, and to be illustrated by real examples.”

The opinion of a Reid, who so nobly conquered his own prejudices, is surely entitled to the highest respect. Yet what are we to think of Dr. Whately's sapience, in taking no notice whatsoever of the idols? I have looked through his book for the purpose, and I think that I am not mistaken in saying, that he has not once

mentioned them. Is this commendable in a christian clergyman, when instructing youth in the art of reasoning?

It may not be amiss to say something about "real" examples. Illustration does not require that they should be real, for supposed or invented ones will answer as well, and Dr. Reid probably thought so too. Bnt, if he did mean the word in its strict sense, it shows the value of the Baconian system very forcibly, when he thought that instances enough could be "easily" collected in his own time, and there is certainly a vast addition since both for induction and the idols.

My first design was, to confine myself to the idols and induction, and to recommend their substitution for the syllogistic theory. I intended not to meddle with any departments of preparatory initiation, and to leave them open for any one to draw as he pleased from Aristotle. But, on considering Bacon more attentively, I feel that he contains nearly every thing necessary to form a logician. What need is there for a prolonged dissertation on definitions, if we study his "further remarks preparatory to the inductive method," which embrace the substance of definition, especially if some additions were made which time and circumstances may have rendered necessary? There is surely no occasion for an appalling exhibition of ideas, substances, categories, propositions, and other things equally embarrassing to the young student, when the First Part of the *Novum Organon* is, from beginning to end, a series of plain rules for the

rectification of our thoughts, our words, our notions, our powers, our judgments, and in short for all the operations of the mind. Indeed Dr. Whately himself complains, that a great deal of irrelevant matters are brought into logical treatises, and he accordingly, after a few preliminaries, goes suddenly into the syllogism. But that is perhaps only stepping from one extreme to another. Both the syllogistic and inductive theories seem to require some initiatory preparation. Definition is surely necessary, for Bacon himself, who thought very little about the schoolmen's rules, when speaking of it says, "For it cometh to pass, for want of this, that we are sure to end there where we ought to have begun, which is in questions and differences about words." *Adv. of Learning, Book 2.*

To illustrate Bacon properly, he must be re-written. No great system can be composed in what we may call a *teachable* order. That must be the work of others, whose minds are not weighed down by the pressure of responsibility and invention. Besides there is, in the present case, a particular consideration of another nature. Bacon is now one of our old authors, and upwards of two centuries would go near to antiquate any spoken tongue, but, along with that, he had a most reprehensible fancy for "uncouth phrasology" and comparisons beneath his genius, and he appears to have little taste altogether in either his English or Latin construction of expression. His language was thus, even in his own day, if not old-fashioned,

what is vulgarly called *queer*, and the necessity for a general remodelling is obvious. It is curious how some great geniuses are tormented by this fancied inadequacy of present language. Spencer was so fond of old words that his *Fairy Queen* is almost as hard to be read as Chaucer, and Lord Byron was so enamoured of them, that he sends us constantly to Bailey's dictionary. But the most remarkable instance is Jeremy Bentham. That profound logician, for surely there never was one if he is to be excluded from the list, had no paltry desire for singularity of expression, but he imagined our modern English insufficient for the precision of his views, and felt himself forced to coin some of the most barbarous and unpronounceable words ever fabricated by man. Nay, even with this aid, he was sometimes absolutely driven to French for the utterance of his conceptions—but what an unwarrantable digression am not I making! Lest it might, however, be supposed as an apology for Bacon, I must now say, that I regard his harsh style as not only inexcusable but reproachful to his learning. I have been sometimes inclined to look on this foible as a kind of superstition, in the case of great men, for conceited pedants are not worth notice. A man of genius should particularly avoid fancying, that ordinary language will not express his sentiments, for he will soon come to believe it in reality—just as harmless bushes have been often at night transformed into restless ghosts.

Not being a logician, I must not obtrude any

more about the illustration of Bacon, though I could wish to offer some further hints. I shall, however, strengthen my proposal by some other quotations from Dr. Reid:—

“Although the art of categorical syllogism is better fitted for scholastic litigation, than for real improvement in knowledge, it is a venerable piece of antiquity, and a great effort of human genius. We admire the pyramids of Egypt, and the wall of China, though useless burdens upon the earth.”

When this is all that can be urged for the syllogistic theory, and that by an admirer of its founder, I ask should not we hasten, even at the eleventh hour, to illustrate Bacon? Here now is another reason:—

“After men had labored in the search of truth near two thousand years, Lord Bacon proposed the method of induction, as a more effectual engine for that purpose. His *Norum Organum* gave a new turn to the thoughts and labors of the inquisitive, more remarkable, and more useful, than that which the *Organum* of Aristotle had given before; and may be considered as a second grand æra in the progress of human reason.”

Pray observe the words “more useful.” Pseudo-philosophers may, in the arrogance of pragmatic conceit, smile at utility, while every one else believes, that anything more useful than another is to be preferred. The following is a further reference to the utility of induction:—

“The art of syllogism produced numberless

disputes, and numberless sects, who fought against each other with much animosity, without gaining or losing ground ; but did nothing considerable for the benefit of human life. The art of induction, first delineated by Lord Bacon, produced numberless laboratories and observatories, in which Nature has been put to the question by thousands of experiments, and forced to confess many of her secrets, which before were hid from mortals. And by these arts have been improved, and human knowledge wonderfully increased."

Oh ! but all that is nothing in the estimation of a Whately. Induction is *only* investigation, not "a process of reasoning," and our youth are therefore to be instructed in the syllogistic art which teaches them how to dispute "without gaining or losing ground." To benefit human life is only a vulgar consideration, and to improve human knowledge has no concern with *his* logic.

The following comes, however, more home to Dr. Whately's particular views :—

"In reasoning by syllogism, from general principles we descend to a conclusion virtually contained in them. The process of induction is more arduous ; being an ascent from particular premises to a general conclusion. The evidence of such general conclusions is not demonstrative but probable : but when the induction is sufficiently copious, and carried on according to the rules of art, it forces conviction no less than demonstration itself does."

After this, are we to pin our faith to Dr. Whately's sleeve, and to believe with him, that induction is no process of reasoning? Why what is reasoning at all if it be not what is here described? He may enigmatise about induction not obtaining the premises of an argument, but, if it "force conviction," it is something very like logic, though he would keep it outside the pale. It is quite futile any longer to trifle about the universal applicability of induction. There is no department of logic which it cannot meet, and it can, besides, discover truth which, according to Dr. Whately, syllogistic logic cannot, or at least does not.

Alluding to induction, which distinguishes first principles taken for granted, from propositions that require proof, and to the necessity of separating them by a distinct line, Dr. Reid says:—

"This has been done in mathematics from the beginning, and has tended greatly to the emolument of that science. It has lately been done in natural philosophy: and by this means that science has advanced more in an hundred and fifty years, than it had done before in two thousand. Every science is in an unformed state until its first principles are ascertained: after that is done, it advances regularly, and secures the ground it has gained."

Is not this great encouragement to prosecute the study of induction, in preference to that of the syllogistic stalkinghorse, or, as Lord Kaims calls it, "the enchanted castle of syllo-

gism, where empty phantoms pass for realities?" But Dr. Reid has summed up, as it were, the inestimable character of Bacon's system in the following, when speaking generally of the *Novum Organon* :—

"Those who understand it, and enter into the spirit of it, will be able to distinguish the chaff from the wheat in philosophical disquisitions into the works of God. They will learn to hold in due contempt all hypotheses and theories, the creatures of human imagination, and to respect nothing but facts sufficiently vouched, or conclusions drawn from them by a fair and chaste interpretation of nature."

This is cheering encouragement for the illustration of Bacon. From this we learn that his *Organon* developes the means, or *process*, of obtaining all the knowledge that is of any value, and of separating delusion from attainable information. There can be little doubt that such a work as I propose would pay for the labor bestowed. Its sale must daily increase, for the public mind is now fully prepared to throw off, in good earnest, the fetters of Aristotle. The very colleges seem weary of a useless opposition to general opinion. They have, in fact, offered terms of capitulation by admitting a scrap of Bacon, and we can plainly perceive that, were he presented in a regularly teachable form, they feel that they must surrender unconditionally. It is evident that they wish to compromise. There are some "signs of the times" that cannot be mistaken.

One of them is the Whatelyan discoveries that induction is not reasoning, and that it is out of the province of logic, and another is that, which may be called "a sop in the pan," of allowing Bacon to come at all within the gates. Time was when he would be fired at, even though he came with a flag of truce. Dr. Whately complains, that the Scotch colleges have admitted part of his Organon into their courses, which he seems to regard as an inconsistent mixture with the syllogistic theory, but he will, ere long, have the same complaint to make against his dear Oxford, and Cambridge too. Dublin, as I have already observed, has followed the Scotch example, and admits one book of the Augm. Scient., with the prefaces to the Inst. Mag. and Nov. Org., but this is, however, only for Moderatorships, and entirely out of the general course. We may here wonder that Bacon's Latin is permitted, when we have his original English, at least in the *Augmentis Scientiarum*, for surely such Latin is no better than "monkish," against which our college folk have such an antipathy.

Having fallen in, perhaps unfairly, with the general censure of Bacon's "uncouth phraseology" justice requires me to observe, that it chiefly appears in his philosophical works. His *New Atlantis* is even an excellent specimen of the narrative style. It is easy, smooth and flowing, and, making due allowances for the use and acceptance of some words or phrases that time or fashion has condemned, it has a certain

air of simplicity and freedom that is peculiarly pleasing and attractive.

As I have mentioned the Atlantis, I cannot forbear to notice that it is there stated, under cover of a fiction, that America was anciently the seat of a lettered and scientific people. Lord Bacon, who looked backwards and forwards with equal penetration, felt convinced of this, and promulgated his opinion though unsupported by a single adherent. All the learned believed that writing and literature were confined to the old world, and that the Mexicans and Peruvians had no progenitors more advanced than themselves. This belief continued till the other day, when the remains of a city were discovered furnishing indisputable proofs of Bacon's conclusions, yet his name is not mentioned, as far as I know, in any account or review of that most important discovery! Such is the fate of a man whose lightest works teem with matter for the philosopher, but our wise men now, so far from appreciating his transcendent merit, are striving to throw him into the shade before he is half known or read.

THE BACONIAN AND ARISTOTELIAN SYSTEMS CONSIDERED IN RESPECT TO THEIR CONSEQUENCES.

It is admitted, that hardly any one who graduates in college understands logic, though all there are obliged to learn it as a matter of course. What a stupid imposition this, and what a prof-

ligate waste of time ! But we will suppose the Baconian system substituted, and that it were found equally difficult. What then ? Some trace or other generally remains on the memory, and here the balance is undoubtedly in favor of Bacon. An imperfect recollection of syllogistic logic does great injury. It makes a young man petulant, headstrong, and averse to sober reasoning—insomuch that those who forget it *in toto* have a decided advantage. Now, in the other case, the consequences are essentially different. What though our student forget the entire routine, he is at least taught humility, and that no impression can be made by overweening confidence. He may forget the whole list of prejudices completely, but this much will remain, that the object of the *idols* is, to divest ourselves of all prejudices before we enter on any intellectual investigation. Of induction, he will recollect, that it is a mode of inquiry by a dispassionate and industrious examination, and which requires us to hear and consider, without impatience, opinions opposed to our own. Which of the two systems, the Baconian or the Aristotelian, should parents wish their sons to be taught ?

Syllogistic logic, viewed in every possible way, appears to be something worse than useless. It never yet made a good reasoner, for, when it was used by the learned, their disquisitions had generally an air of flightiness, and they rarely arrived at any solid conclusions. Those who know it now do not use it in their writings or

otherwise, and a little knowledge of it is extremely pernicious. The Baconian logic is, on the contrary, every way useful. It is the grand engine for investigating the sciences, and for beating down the petty wiles of syllogistic quibbling, while the most trifling knowledge of it has this merit, that it lays a foundation for unexceptionable morality. We may assert, without any straining at amplification, that it does some part of the business of the clergyman and the pulpit.

Parents would not let their sons be taught Aristotelian logic, if they were sufficiently aware of its demoralising tendency. The question is simply, would they have them modest, becomingly diffident, and not full of what the French call *opiniâtreté*? If they would, let them learn the Baconian logic in its stead. I hope to see the day when they will generally insist on this, for that would indeed lay the axe to the root, and prostrate the old peripatetic prejudices of our universities.

The Baconian system is christian logic, for it accords with the amiable spirit of christianity—that of Aristotle is pagan logic, and is in keeping with the character of paganism. I state this without any concern about what some, who believe themselves to be excessively liberal, may think proper to say. Let them not say, however, that I blame the Greeks for not having been christians. How could they be christians before Christ appeared? No, but I blame them, as men highly civilised, for not attempting

some improvement, some melioration, of that mythology which was their religion. That they could have done, but it would not appear to suit their views. We may see their notions of wisdom in the vaunted Ulysses, who was distinguished for mendacity and craftiness—to say nothing of his being an adulterer and debauchee, for those seemed to be almost indispensable requisites to a place among their divinities. Could we reasonably expect any logical system, except one based on stratagem, to be a favorite among a people having such ideas of wisdom? I boldly assert, that syllogistic logic is not only inconsistent with, but disgraceful to, christianity. It suited paganism well, but let those who now advocate it consider, whether they are not, however unconsciously, supporting pagan morality. They ought to put the Spartan Boy as a frontispiece to their treatises, in order that our youth should be continually reminded of the *admirable* Grecian precept, that thieving is a virtue, provided it be managed so as to elude discovery. To render it still more impressive, it might be made up into a very *instructive* syllogism.

Again I call on parents, who profess christianity, to look to their sons. I tell them that they have no excuse, for they have every thing in their own power. They have only to require that their sons be taught the Baconian, not syllogistic, logic. Let them not be under any apprehensions of a refusal. College directors will not “fall out with their bread and

butter." However enamoured they may be of Aristotle, they are not incurably smitten—they will stifle their passion, and will admit, like Shakespear's Richard, that they are "not made of stone," sooner than diminish the students by whom they live.

COMPLETION OF BACON.

It is well known that Lord Bacon was unable to complete his grand design, as regards philosophy. This he foresaw and declared himself, but he continued, notwithstanding, to work at it till death called him away. It was to establish a system of philosophy on the severe and chaste principles of experimental research, and he labored at this herculean undertaking with a vigor and earnestness, considering his disgraces and bad health, that must ever be a subject of admiration. Fortunately he has left his whole plan so completely laid out, and the materials for construction so ample in his *Prodromi*, or fifth part of the *Instauration*, that the completion is now quite practicable. It was intended as a means for erecting the sixth and last part, called *Philosophia Secunda*, sive *Scientia Activa*, of which he had only put up the scaffolding.

Yet no attempt has been made to finish this magnificent and supereminently useful structure! Is it that intellectual capacity cannot be found, or that Aristotle's frippery is more attractive? As it would be painful to inquire about the

causes, I shall content myself by exhorting the learned to turn their thoughts towards this very important object. True it is a vast undertaking, for many additions must now be made, but let them recollect, that one man would have completed it, as far as knowledge then permitted, if death had spared him a few years longer, and that he left the plan and the materials ready. I do not say this with any view to diminish their merit, but, on the contrary, to encourage them. Bacon is like a Homer or Milton, which centuries on centuries are required to produce, and the noblest work in which the learned could engage, would be the completion of that which death alone prevented him from accomplishing.

Speaking on this subject, a writer of his life, who was probably Dr. Birch, says:—

“The learned of all countries from his [Bacon's] days have been only laboring some separate or lesser parts of this amazing edifice, which ages to come may not see finished according to the model left them by this one man.”

Now I earnestly call on England to rescue herself from this reproach to her intellect, her judgment, and her understanding. What a disgrace if Germany or France should be the first to finish that which her own philosopher planned! She has not yet illustrated even his inductive system. Her universities are busied in the silly task of, I make no blunder as Dr. Whately testifies, teaching an unteachable logic, whilst the mightiest genius that ever illumined

science, and whom her own soil produced, lies neglected, and sheds his light in vain on stultified Aristotelianism !

I find that the Rev. W. Whewell, in the preface to his *History of the Inductive Sciences*, feebly adverts to the completion of Bacon. Feebly I say because, in such a work, he should have spoken out most emphatically and decidedly on what concerned science, and his own general subject, so very materially. But we need not wonder at this, when he says hardly any thing about logic, though it was that which retarded and debased the inductive sciences, and kept them so long the sport of whimsical speculation. An unsound method of reasoning was the cause of so much folly in philosophy, and he ought to have exhibited the source of all that folly. I am very proud, however, to have so distinguished a name as Whewell on my side for the completion of Bacon.

BACON AND ARISTOTLE COMPARED.

No persons are better fitted for comparison than those two great philosophers. One ruled over the mental faculties for twenty centuries, and the dominion of Bacon will, in all likelihood, be as lasting as the world itself. For we can hardly suppose printing to be ever extirpated, and, while there is any literature, he must be the guide of reasoning and science.

But a regular comparison is beyond my ability. That would require talents and learning which I do not possess, and I must therefore premise, that I mean to take only a cursory view of the general value of their respective writings.

I shall begin with their *Organons*, as they are my principal concern. Aristotle is here greatly praised for his inventive genius, yet surely the categories are a most important part of his structure, and they are not his production. This is admitted even by Dr. Whately who says, without any reserve, that they were invented by Archytas. Take them away from Aristotle, and his great system of logic would be very naked, and then again there are the predicables, which it is said, though I think without good proofs, belong to Porphyry. The syllogism itself was wielded by other logicians before Aristotle, so that he has not the merit of its first introduction to the art of reasoning, and it is well known that sophisms were used long before his time. In point of invention he has not, therefore, such mighty claims as his encomiasts allege, especially if we consider what a great deal of knowledge he must have drawn from his amiable and unassuming master.

As an inventor, Bacon has infinitely more merit. We may fairly say, that he invented induction as a logical engine. What was known before was worse than total ignorance, for it was, as himself truly observes, "utterly

vicious and incompetent." It sought to INVENT, not to seek, the principles of sciences, which was a sad misuse of intellect, and as different from his induction as light is from darkness. The similitude is a very common one, though here of singular aptitude, for his was light itself, while the other was truly a melancholy darkness—a fit companion for the syllogistic theory.

Then, as to the Idols, they are solely and entirely Bacon's. This is the opinion of Dr. Reid, from whom I have already given a quotation to that effect. If there be any thing new they are, for no one else ever thought of such a foundation for logic, and it certainly is the only true one for any system of reasoning, or of intellectual inquiry. I am far from considering invention as a test of superiority, for greater genius may be required in perfecting or improving what has been already sketched out, but, if there be a question on the merit of invention, I think that Bacon must bear away the palm. As to the utility of the two Organons, I may be allowed to say, that the good sense of the world has decided against Aristotle.

But much is said of Aristotle's other works, and of the mighty genius, and versatility of talents, that he there evinced. I have no wish to underrate his merit, but I should suppose that a philosopher prides himself most on his ontology and physics, and those of Aristotle are replete with errors, chiefly arising from presumption, and a total contempt of humility.

His zoology, considering that he was the first who treated the study regularly, is a valuable work, and his judgment in rhetoric and poetry is generally admitted. As he was a pagan, it might be unfair to speak of his ethics, but I believe that his politics are much inferior to some modern treatises on government. He wrote on several other subjects too, for Gillies tells us that he left 400 treatises, of which we have only 48, though Dr. Browne says, in his *Classical Dictionary*, "Almost all his writings, which are composed on a variety of subjects, are extant." We have, however, sufficient whereby to judge of his abilities, and certainly Bacon need not fear to stand in competition. It is comparatively easy to speculate or moralise. At least it comes easy to a man of genius, but to be constantly pointing out new sources of knowledge is, in fact, to be constantly making new discoveries, and requires vastly superior abilities. Now Bacon's principal works are all of that description, and they evince such powerful resources of mind, and such amazingly varied information, that Aristotle seems little indeed when placed by his side.

We must also take into account that, owing to the influence of Aristotle's pernicious logic and erroneous philosophy, Bacon found the sciences and general knowledge in a state of infancy, or at most of adolescence. He had literally to set up as their schoolmaster, and to undertake their education. In this gigantic scheme, it may be said that he left nothing

untouched. From the most abstruse studies, he did not disdain to investigate the lowest—even husbandry down to a compost or manure ! His capacious intellect penetrated into every thing that concerns life or society—he ascended and descended with equal facility. In such a prodigious range, is it any wonder that he should sometimes appear weak or trifling ? Yet some occasional observations of little or no value, in the midst of ten thousand important suggestions, have called forth petty sneers, though such failures should redound to his praise. He had no paltry anxiety about fame, and, when any thing occurred which he thought might tend to the improvement of an art or study, however slight his acquaintance with it, he gave the hint, regardless of whether he exposed his own ignorance or not. I think that it forcibly shows his magnanimity, and his ardent desire to be useful, even at the risk of that which is so dear to us all, reputation.

How different this picture from that of Aristotle ! That conceited philosopher, whose distinguishing feature was vanity, tells nothing in an artless way, for he is as well supplied with cloaks as Horace's Lucullus. Dr. Reid, alluding to his presumption in “determining things above all human knowledge,” says :—

“Rather than confess his ignorance, he hides it under hard words and ambiguous expressions, of which his interpreters can make what pleases them.”

Read that ye silly peripatetics, who rave

about the omniscience of your idol ! There he is plainly charged with IGNORANCE, and that in addition to all his dogmatical errors. Whatever ye may say of me, ye cannot affect to think lightly of Dr. Reid, for he knew his author well, and could properly estimate his merits and demerits. But indeed he could not, as a man of impartiality, speak otherwise. He found Aristotle constantly assuming his mere opinions as facts, for he does so even in his zoology, and is not that ignorance ? If he were always, or even mostly, right, it would certainly show his acumen, but he is oftener wrong. His ignorance is of the most unpardonable description, for he presumed to know more than he did know. Here his vanity overpowered what good sense he possessed, and that is perhaps the worst kind of ignorance, especially when attempted to be disguised by ambiguous and mysterious language. It is true that ignorance is defined as a want of knowledge, and that he had a large share of varied information, but I fear that his greatest admirers must admit that he was not honest as a writer, and a certain degree of ignorance is inseparable from such dishonesty.

What a contrast does Bacon exhibit ! He disarms his enemies by his modesty, while Aristotle disgusts his very friends by his "pride, vanity, and envy." The English philosopher throws open his vast stores of knowledge, without any ostentation, and offers them as merely a collection of hints or suggestions, insomuch that he is frequently forgotten as being

the original inventer or discoverer. Take for an instance the following :—

“ In preparation of medicines, I do find strange, especially considering how mineral medicines have been extolled, and that they are safer for the outward than inward parts, that no man hath sought to make an imitation by art of natural baths, and medicinable fountains; which nevertheless are confessed to receive their virtues from minerals; and not so only, but discerned and distinguished from what particular mineral they receive tincture, as sulphur, vitriol, steel or the like; which nature, if it may be reduced to composition of art, both the variety of them will be increased, and the temper of them will be more commanded.”

Now you can fairly judge of Bacon's unostentatious mode. There is the discovery of Medicated Baths, announced without any parade whatsoever. Indeed so far from any pride, he labors to despatch it in a protracted single sentence, as though it were not worth a second. What a rout would not others make about such a thought! Why they would contrive to occupy an entire volume in its development, but with him it was only as a grain of sand out of a heap. His modesty in thus merely *suggesting* has caused him to be overlooked in several instances. We have medicated baths every where now, and I verily believe that not one of their proprietors know that they are indebted to Bacon for the discovery. Of this I can give nearly a proof. Sir Arthur Clarke, a learned member of the

Faculty, and author of some valuable medical publications, has an excellent establishment of that kind in Dublin, where one may have any of the spas of England or the Continent, and of a stronger quality if required—and yet in a treatise on artificial mineral waters, wherein their origin and progress are traced, he does not mention the name of Bacon. Now as he is a writer of more than ordinary research and erudition, and who is besides well versed in both the practice and history of chemistry, I need not go further to show how little is known of our immortal philosopher, though we have all grown wiser by his labors. When he thus escapes Sir Arthur, I may almost presume that no other writer, on a similar subject, has assigned him the discovery.

Yet upwards of two centuries have not exhausted Bacon's rich treasury of knowledge, for many important *hints* lie there still unheeded. He is in good truth only spoken of—not read. Those who chance to look into him, flippantly turn away in disdain, when they stumble on some things now well known to every one, without ever recollecting that it was he who made them trite. I do think that one might work on a valuable hint out of Bacon, and take credit for the originality, without any fear of detection!

This great man knew well how undeserving his own country was of his philosophical labors, and for which reason he caused what he wrote in English to be translated into Latin, in order to the diffusion of his immortal works on the

continent. He reserved, however, the expression of his displeasure for his last will, which has these remarkable words, "My name and memory I leave to foreign nations; and to mine own countrymen, after some time be passed over." What a prophetic spirit! It is indeed a disgrace to England that he should be so neglected, and that a pagan and "perriwig-pated" logic should still be taught in our colleges, instead of his christian and rational system. There is a saying on the continent, even among the common people, "as learned as Bacon," which proves how early his merit was there estimated, while here one must be of some reading to have heard of him at all. There, every one knows at least that there was a very learned man called Bacon—here, we have our hundred thousands, perhaps millions, who know not that such a person ever existed.

Of ignorance, such as that charged to Aristotle, Bacon cannot be accused, though he sometimes evinces weakness. I of course allude only to what are properly his philosophical works, and this must be taken also in a very particular sense. For instance, in the *Advancement of Learning*, his base flattery of James must be left out, as having nothing to do with our present considerations. He was strictly honest only in his scientific inquiries—we can place little dependence on him in other respects. As a philosopher, he was singular in his zeal for truth—as a man, he was too much biassed by self-interest to have a proper regard for integrity.

Keeping this distinction in view, we shall nowhere find so much learning and knowledge with so little alloy. The "trifling matter" occasionally found in his works, and which is much dwelt on by those who would depreciate him, calls for no remark beyond what I have already observed, that it redounds more to his praise than his discredit. But some go further, and accuse him of sometimes assuming hypotheses as facts, "in violation of his own rules." Now suppose, though no instances are given, that we admit the charge, will they say that he lays them down as positive or unerring principles, after the fashion of Aristotle? I think not. Here lies a great difference between the two philosophers. Bacon assumes no magisterial air. His very errors are instructive, because, where he does not enter into a proper scrutiny, he submits himself in a manner to our examination, and does not dictatorially insist. Besides, he showed us a certain method of detecting his own errors, as for instance his opposition to the Copernican system, while Aristotle, by his dogmatical assumptions, filled the world with visionaries, and left them no mode of relief, because he blocked up the road to truth by a formidable army of categories and syllogisms. I know of only one instance where Bacon approaches to that ignorance of which Aristotle is so often guilty, and that is in his Christian Paradoxes. He begins by showing that, in christianity, we must believe in things that are incomprehensible to our reason. That is very

proper, for, if we reject all mysteries, away goes the christian religion at once, but, as he proceeds, he becomes more and more *paradoxical*, till at last he leaves his christian a fair subject for pity or scorn. Here he conceived more than he had ability to delineate, for he nowhere appears to be irreligious, and, if he were, he was not the man to proclaim what would injure him with his patrons. He ought to have torn that fatal paper, for God knows he had frailties enough without needlessly exposing himself to the additional charge of deism, or at least of ridiculing christianity—of which I think we may safely pronounce him to be completely innocent.

In summing up the merits of our two philosophers, there appears an astounding difference. Let us call on the admirers of Aristotle to recount his services. Perhaps they will say that he has given us good rules for the stage, which by the bye we do not follow—that he has furnished the principles of rhetoric, and written very learnedly on poetry, and has left us a history of philosophy, and the zoography of his own times. Very well. But let them now put in the balance the injuries he has inflicted. He kept the noble study of astronomy degraded for eighteen centuries, as shown in page 75, where I beg that 1543 may be read for 1500—he debased men's understanding by a false philosophy, and kept the sciences stationary by a perfidious logic, during the long period of almost twenty centuries. I do not like such strong

words, but I cannot help calling that logic perfidious which, as ample experience has confirmed, is inimical to the integrity of reasoning, and to morality itself.

Bacon's services are so numerous that it would be vain to attempt a recapitulation. We must, therefore, take only a kind of general view. Whatever advancement the sciences have made, for the last two hundred years, belongs to him. He first showed the true method to study them, and the proof of its efficacy is their rapid progress, notwithstanding the opposition of universities. To him we are also indebted for a more rational turn to metaphysics, by showing that syllogistic pageantry led only to chimerical pursuits, such as those in which Aristotle's followers were so uselessly engaged. Along with these inappreciable benefits, we are not to forget his actual discoveries, nor his direct suggestions for the improvement of particular branches of science. He liberated the human faculties from a disgraceful slavery, and, by furnishing a better logic than the delusive syllogism, he opened the road to a real, instead of a deceptive, process of argument.

Then, as to injuries, he inflicted NONE. He was the friend of well-regulated freedom, and the enemy of licentious excursions into the regions of intellectual inquiry. The world never produced a philosopher who had less of the dictatorial or dogmatic spirit. It is astonishing how he could keep such stupendous intellect under so complete a subjection. We feel no

humiliation in acknowledging, as our master, him who first knocked off our fetters, and then assumed no other authority than to warn us of those errors that lead to an abuse of our liberty. He is the safest guide that ever appeared, both in rule and practice, for the exercise of our reasoning faculties—his own example itself being a perpetual admonition against self-conceit, prejudice, or hasty judgment.

The friends of Aristotle find it difficult to defend him, while the enemies of Bacon are always puzzled how to turn us against his doctrines. In Rees' Cyclopædia, under the article ARISTOTLE, which is altogether rather favorable to that philosopher, there is the following as a kind of summary or general estimate:—

“Upon the whole, it has been observed by competent and candid judges, that the philosophy of Aristotle is rather the philosophy of words than of things, and that the study of his writings tends more to perplex the understanding with subtle distinctions than to enlighten it with real knowledge.”

The article BACON, in Dr. Brewster's Edinburgh Encyclopædia, is evidently penned in a spirit of hostility to that great man, chiefly I think on account of his unfortunate character. Though that should never influence any one against his immortal genius, I am willing to take it here as some excuse for prejudicial feelings, and yet after all what do we find? General but not specific charges. The writer labors to show that his merit is overrated, because men's minds had

been previously prepared "to cast off the yoke of authority," and "to revolt from the dogmas of Aristotle." But after several *general* accusations, without producing even one solitary instance, he says :—

"With all these faults, and others on which it might seem invidious to dwell, Bacon must be allowed the merit of having bequeathed to the world a larger and more precious mass of sound logical instructions, deduced from his own reflections, than are to be found in the writings of all the authors who preceded him."

Look now at the two summaries—"on this picture, and upon that." Bring forward Aristotle's friends and Bacon's enemies. Hear what they have to say respectively, and Bacon will be found to outweigh Aristotle as an elephant to an ass.

THE LONDON UNIVERSITY.

Ultra conservatism is bad enough in politics, but it is exceedingly stupid in literature. I have no objection to even a large portion of caution, because it is necessary to keep rash innovators in check, but, when it extends to a fear of any change, it defeats its own object, and converts moderate reformers into ultra radicals, who generally succeed in carrying more than they originally contemplated. Ultra conservatism is the parent of narrow principles and confined views, and those who profess it, however otherwise learned, can hardly be supposed to have an enlarged understanding.

Our colleges are renowned for this doctrine. They see danger in every change, and would tremble at any in the students' caps or gowns. Occasionally, indeed, they substitute one Greek or Roman classic for another, which they regard as a great concession to the hateful spirit of novelty, but, in science, they are filled with "saucy doubts and fears," and with admiration of the Medes and Persians whose laws were never to be altered. As they are, to a certain extent, under government control, they are consequently, to a certain extent, not free, and it was all those considerations that gave rise to the London University, which was to be wholly uninfluenced and independent, and at full liberty to adopt the most enlightened plan of instruction.

Now I would ask its managers what they are doing about logic. Have they rejected Aristotle's system, and caused Bacon's to be digested into a teachable form? They profess not to interfere with religion, which I think is very proper, but every one expects that they should inculcate sound morality. Aristotle's logic is opposed to honesty and fair dealing. It is the logic of gamesters or triflers, and is consequently injurious to morals. Bacon's logic is, from its nature, in hostility to quibbling or petty advantages. It is the logic of integrity and candor, and conduces to lay a foundation for good morality, whatsoever may be our religion. Let parents look to this, who send their sons to the London University, in expectation of an improved course of education.

I know not what sort of logic is taught there, but I am quite sure that it is a matter of great consequence in education. Whatever kind we learn in youth, though we may completely forget the entire routine or management, leaves a certain impression, and its influence is afterwards felt according as it is an artful and captious, or an honest and investigative, system. The London University is a perfectly free and unshackled institution. It has no old prejudices to combat, and is at full liberty to adopt, what the public have been led to expect, a liberal and enlightened course. If it teach peripatetic logic, it departs from the spirit of its original professions, but I should hope that it requires only a hint to do what is right.

At all our colleges, the fellows or teachers find time to write learned works, and I submit to those of the London University to take Bacon into their serious consideration. Let them first illustrate his inductive system, and then proceed to the completion of his grand philosophical scheme. Their leisure could not be more nobly or more usefully employed. It would confer literary immortality on themselves, and render their establishment celebrated throughout the civilised world.

CONCLUSION.

In taking my leave I will not conceal, that I depend a great deal on the ladies for that reformation which I so strenuously advocate.

They are allowed to be, generally, much more religious than men, and, when they see plainly the demoralising tendency of syllogistic logic, they will, no doubt, exert their powerful influence against it, and support the Baconian method. Hitherto they have been completely excluded from logic as a *science* utterly above their comprehension, for even Madame de Staël, who was a man in literature, contented herself with the examination of philosophical systems, but I flatter myself that I have rendered its *constitution* universally intelligible, and that they will now venture to interfere, at least where the education of their sons is in question. I have a strong hope too, that they will materially contribute towards reforming the mode of teaching the classics. From my sketch of the plan pursued, though much more concise than I could wish, they will see the necessity of some change, for they cannot but perceive that morality is there also deeply involved. It is surely right to ask their aid when men pertinaciously combine to disseminate ignorance and profligacy—and it would be a curious and triumphal epoch in female history, if the ladies achieved the victory of correcting those vicious systems of universities, which I think I have shown to be anti-christian.

I am fully aware that the knowledge-retarders will laugh heartily at my appealing to the sex, but perhaps they will not have to laugh so long as they may think. Barefaced as they are, they dare not defend irreligion, and

well they know that female power is here anything but contemptible. With CHRISTIAN and KNOWLEDGE in their mouths, and PAGAN and IGNORANCE in their hearts, they have too long imposed on "the lords of the creation"—we shall now see whether the women can be so easily cajoled. I have shown that syllogistic logic is suitable only to that absurd heathenism whence it sprang, and that the mode of classic instruction is repugnant to christian notions, and sure I am, now that an unhallowed combination is fairly exposed, that no educated lady will hesitate to oppose an organised system of demoralisation and intellectual debasement.

Not having the vanity to think that what I say should have a convincing effect, I request the ladies to keep a steady eye on the authorities that I have quoted against syllogistic mummery. The names of Bacon and Locke, two of the most enlightened philosophers that any age or country ever produced, would be alone sufficient to condemn such a burlesque on reasoning, for who will have the presumption to say that he is superior to them? Here we might securely rest, but, when we find them openly supported by succeeding great men, besides the numberless others who, as explained in page 162 to 165, silently approve, the evidence and conviction become absolutely irresistible. Let me therefore recommend the ladies to read only from the nineteenth paragraph to the end of Lecture 49, and first nine paragraphs of the next following, by the late very learned Dr. Thomas Brown,

on the Philosophy of the Mind, which are devoted to an examination of the syllogistic theory, and written in a plain, and rather playful, style, considering his general seriousness. There they will find that "worse than trifling art," as he justly calls it, fairly exhibited to view, and impartially examined in all its bearings, by an upright and competent judge. Here is matter for another *tremendous* laugh—sending ladies to read philosophy! Aye indeed the sublime "philosophy" of syllogistic trickery—but, lest our worthy anti-knowledge leaguers should get into convulsions, I must administer something to allay their fearful risibility. Akin to Adam Smith's removal from the chair of logic in Glasgow, Dr. Brown, one of the most profound reasoners of our times, was refused it in Edinburgh, though no one could then fill it so efficiently! But his sentiments on the "worse than trifling art" were known, and he too was appointed professor of Moral Philosophy in order to *quiet* him. He there proved, however, to be a little too honest for management, and, in that situation, he had the courage, though it hasarded his prospects in life, to deliver those two lectures to which I now invite the attention of my female readers. There is not much here, as I apprehend, to excite laughter—indeed college proceedings too often "make the judicious grieve."

Is it to be endured that, to keep up a gross imposture, weak or designing men should lay down a rule, that none of the other sex can

comprehend the *awful* mysteries of syllogistic "science," to which, nevertheless, boys of fifteen are admitted? This is making a rare distinction truly between male and female intellect. So then their mothers, who may be forty or fifty years' old, must not even ask what this questionable logic means, though their sons, not yet weaned off from tops and marbles, are deemed wise enough for its study! Will they any longer, I seriously ask them, submit to such a degradation—such a contemptuous insult to their understanding? If they do, then let them rest satisfied to be held as inferior beings in the scale of intellectual creation. They have as good a right, nay it is their duty, to inquire about what their sons as well as their daughters are learning. For this it is not necessary to know Greek or Latin. There are now either literal or free translations of all the classics, and they should examine at least those for school and college use. Nor would it be amiss to look into some others that are not taught there. For, by reading certain portions that are omitted through mere shame, they will be the better enabled to judge of the shocking and revolting principles of heathenism altogether. This might seem to be an arduous task, but how could mothers be better employed than in qualifying themselves to oppose an educational system so prejudicial to their offspring? The labor would not, however, be so great as it might appear. Many of them have readily gone through the entire of Scott's novels, poems

and letters, and all the classics necessary to be read are not perhaps half so bulky. Thus, since they may pass Euclid and every thing concerning mathematics, optics, astronomy, mechanics, statics, hydrostatics, or such studies as do not affect the morals, they could easily accomplish the perusal of those famous works destined for the *edification* of youth. Let them look particularly to the "worse than trifling" logic, from any knowledge of which they have been, I may say till now, so insolently prohibited. The mind is much biassed by whatever plan of reasoning is early instilled, and it is only the few who have power to shake off its influence in mature years. It behoves every mother, therefore, to see that her son be taught an honest system. I have shown, by unquestionable testimony, that the Baconian is the only honest and rational method, and that Aristotle's is calculated for opinionative petulance, and to warp and mislead the judgment. The two systems are now exposed—the rubbish is removed that prevented them from being generally understood, and mothers should do their duty where fathers will not.

I have only glanced at what "some persons," as Locke's biographer significantly says in my quotation, page 138, are doing with respect to education. No one, surely, will accuse the colleges of intentionally favoring any thing bordering on irreligion. Their greatest enemies could not do that, and yet it is to be feared that they are, by teaching a dogmatically accom-

modating logic, and an unqualified admiration of pagan writers, unintentionally promoting that bane of society, religious infidelity or free thinking, and also laxity of morals. I hope yet to have an opportunity of going into that subject at the length which its importance demands, and I must now content myself with observing, that "some persons" know well that I have been necessarily obliged to touch lightly on what is called classical *learning*. Yes necessarily, for they know that my hands are in a manner tied up, and that I dare not soil my paper with even an allusion to the horrid depravity of their favorite poet Virgil, whose praise they are never tired of sounding.

But, lest they may impose on the uninformed by alleging that history, however revolting, should not be falsified for any purpose, I must anticipate such petty deception by observing, that what I condemn is not concerned with the validity of history. It is to the poets I allude, who absolutely sing the praises of the most shocking and disgusting vices. Juvenal is the only one who boldly lashed corruption, and yet he, when attacking certain licentiousness of his day, proposes a corrective at which human nature shudders, and turns with horror from the monster who could deliberately publish that which would be enough to blanch the sable cheek of the African savage. And yet they who teach the poetry of those heathens, without any other notes than what serve to explain the *beauty* of the composition, are the men who express a holy

indignation against Swift, and who scruple to admit a monument to Lord Byron in Westminster abbey! Why the worst of their poems are morality itself in comparison to those of Virgil or Juvenal, to whom I verily believe there would be no objection to erect a cenotaph, though, to the great honor of gospel light, the most abandoned or profligate christian never wrote any thing half so impious or scandalous as what we find in the "classics."

Let not "some persons" think that I write unadvisedly as respects the ladies. I am fully aware of what will be said, and the affected indignation that will be excited, on that head. "What! Desire religious mothers to read what has been, through decency, omitted even in the classic-admiring universities!!! Oh! Oh!! Oh!!!" Yes truly. My worthy *pious* friends you may multiply notes of admiration to infinity, but you shall not stop me from my purpose. Well do you know, that what I allude to cannot corrupt *them*. You know that, from its very nature, it can only arouse their horror and detestation, and that is what you fear. Yes. That is what alarms you, and I tell you that all your mock affectation of delicacy will not avail. The vile *morality* of your "classic" writers must be fairly exposed, and no longer held up for the admiration of our youth. Dear me how innocent you are! You never heard, not you, of a Madan or a Davidson, who commisseratively furnished all the omitted portions in literal English, and which are, at this moment, in the

hands of every schoolboy learning Latin. But you never heard of this no more than of the *dread* Jupiter's—I thought to mention it, but my courage fails. A more fitting opportunity will yet be presented for unmasking the infamous conceptions of, what we are told to call, “classical taste.”

The mischief is, in fact, already done to its extent, and it is but cruel mockery to any longer affect delicacy. It only now remains for the well disposed to repair the damages, and to arrest the further progress of heathenish contagion. Even setting aside the disgusting grossness of pagan writers, their general principles are injurious. The learned French jesuit Sanadon, who most laboriously collated and reviewed Horace a century ago, cites one of his odes to show that he was an Epicurean, and that he believed in the mortality of the soul, though he strives to generally conceal it through policy, and is constantly invoking the gods. Mortality here means, that human death is the same as that of a dog or a rat, or, properly speaking, that we have no souls. That is bad enough, but Epicurism goes further—it is atheism. Its followers attributed every thing to Nature or CHANCE, and that is atheism in the strict sense. Despicable as was the mythology it at least acknowledged a Providence, though in a bungling manner, and also a future state, but Epicurus denied both one and the other. Now Sanadon cites another ode of Horace to show, that he believed in this impious

doctrine of "fortuitous jumbling of atoms" or chance, and yet this man of no religion—this preacher of abstemiousness in mockery and of voluptuousness in earnest—this ATHEIST, I say, is held up to youth as the great enlightened guide and sage moralist! No writer is so often quoted by the learned, and every line of him is taught even in the entrance course prescribed to our schools by the colleges.

I must not dismiss Sanadon thus lightly, for I have here "a crow to pluck." Never was there a more elaborate or pains-taking editor of Horace. As a *restorer*, he astonishes us by his prodigious industry, extensive reading, and indefatigable perseverance. He did not leave a single word of his author unconsidered—he fixes the chronological accuracy of all his pieces—gives his age when he wrote each—removes verses, lines, and sometimes even solitary words, into their presumed locality elsewhere—corrects the errors of former transcribers and commentators, and makes a new arrangement altogether in text, disposition and order. We may judge of his unwearied diligence by one expression in his preface, "Of all the pieces of Horace I leave but three in their ancient situation." He further says, "I every where prefix new titles and new arguments. One piece I sometimes divide into two, and of several I sometimes make but one. I weed out several verses, which have sometimes appeared under the poet's name; in some others I change the received distribution." For every

alteration he gives his reasons at length, and we must not forget that he also translated his author.

Yet the able article in the last Quarterly Review, No. 124, on Mr. Tate's *Horatius Restitutus*, does not say a word of Sanadon. But for this I do not think that the reviewers should be blamed. We cannot reasonably expect that, amidst their varied literary duties, they should know every author on each particular subject. Indeed we ought rather to wonder at the intimate knowledge those all-work critics commonly evince, especially when we know that there cannot be afforded a separate writer for each department of art or science. He who now reviews a classic may be next called upon for strictures on astronomy, rail-roads, chemistry, mathematics or politics, and here it is that they are very differently circumstanced from Mr. Tate, who tell us that he was closely engaged with Horace "for more than one third of a century." Now, though I have not seen Mr. Tate's work, I presume that, if he had mentioned Sanadon, the Quarterly reviewers would not have passed him by entirely, and, assuming the omission to lie at his door, what can he say in defence? After thirty-four years' study of his author it would be a reproach, nay he ought himself to deem it an insult, to suppose him unacquainted with Sanadon—his fellow-laborer in the Horatian vineyard, and who toiled so learnedly in the same *restituting* vocation. Mr Tate calls his

work "Horatius Restitutus; or the Books of Horace arranged in *chronological order*," which is also the grand object of Sanadon, and therefore these two questions obviously arise, Did Mr. Tate think Sanadon beneath his notice? or Did he draw unacknowledged information from his ample but neglected stores?

The Quarterly reviewers dwell forcibly on the benefits of having, through a consecutive order like Mr. Tate's, a view of Rome, by such a master-hand as Horace, at the very interesting period in which he lived. Now let them read what Sanadon says, after many other observations on the utility of a just chronological arrangement:—

"But the most considerable advantage is, that in reading this excellent poet we shall read a series of faithful history of the first Emperor of Rome, written by an author his contemporary, and adorned with all the graces of the most charming poetry. This alone should suffice to justify the new order I have given to the works of my author."

After that I think they will admit, that the merit of Mr. Tate's "Restitutus" cannot be fairly estimated without a diligent comparison with that of Sanadon. Mr. Tate's may be superior, but that must be tried.

I shall make no apology for this digression. On the contrary, I claim thanks from the English and Scotch for introducing the forgotten Sanadon, because he does full justice to their

learned countrymen, Bentley and Cunningham. He calls them "the best critics of our times," and acknowledges that he has "chiefly" profited by their labors. Such praise from an erudite foreigner is always grateful, though I grant that he frequently disagrees with Bentley, while he pays Cunningham the high compliment of seldom dissenting from his judgment.

Since I have digressed I shall trespass further, in order to insert a remark that should have appeared in page 23, when giving the meaning of *peripatetic*. Some over-classical writers have, without any corresponding explanation, called Christ "the divine peripatetic," because he sometimes *lectured*, or delivered his precepts, while *walking* with his disciples. The religious propriety of this application may be questioned, inasmuch as the word has, for centuries, been understood to exclusively mean a follower of Aristotle, or, used adjectively, as pertaining to his doctrines. Yet, where no irreverence is intended, it might seem captious to raise an objection, and I notice it only for the purpose of warning my unlearned readers, who might be puzzled or misled by the expression, that they are not for a moment to imagine that our Redeemer paid any respect to the pagan philosopher. The learned are not always aware of the perplexing doubts, or the false and injurious inferences, that they raise by such unnecessary freedoms with language, and they too commonly forget that their books are *liable* to be seen by ordinary readers. We are not bound to know

any more than the common dictionary meaning of peripatetic, and is it not unworthy sport for the *literati* to make a plain man assert in company, upon what he may deem safe authority, that our Saviour was an Aristotelian?

To resume our subject of classical instruction—when the matter comes to plain speaking, and an open investigation seems now unavoidable, people will be shocked to think how long a corruptive, and an anti-christian, system of education has prevailed, and the public voice will irresistibly demand a change. But its advocates know that the ablest men might write in vain for an alteration. They tremble justly at enlightening the female world on this subject, because they know that reformation will be then inevitable, and once more I say, that no hypocritical cant about modesty will signify a jot. The smooth faced declaimers may ring that tocsin as loud as they please—it will serve only to rally the foes of revolting turpitude, indecency and heathenism. Along with the pagan-christian ethical education down goes, as a matter of course, the “worse than trifling logic,” and then grave deception’s “occupation is gone.”

It cannot be said, that “the system has worked well”—the common answer to all who desire any reformation. If space permitted I could show that it never did work well, but I must now confine myself to almost a single observation. There is a much greater indifference to virtue, taken in its extended sense, among the fashionable who have been classically

educated, than among those who have not. It cannot well be otherwise under the plan pursued, though there have been, and will be always I hope, many eminent exceptions. For, as it is not easy to imagine any thing more opposed to christian precepts than pagan morality, when we are taught at an early age to admire it, and to regard CLASSICAL as a word including every thing that is chaste or beautiful, can we be surprised at finding the pure doctrine of Scripture so neglected? It is almost as hard to admire one and revere the other properly, as it would be to profess two different religions at once.

What would be thought of him who should recommend, through some wild notions of religious liberalism, that a chapter in the Koran should be read in conjunction with one in the Bible? Would he not be deemed a silly fanatic, or denounced as a fit object for legal prosecution? Yet the *approved* mode of classical tuition is no less monstrous and incompatible—it is teaching a reverence for heathenism and christianity together.

The change which I so earnestly advise is now especially desirable. In fact no time ought to be lost, for the enemy is at our very gates. Dr. Strauss, a German *savant*, has recently issued a THIRD edition of his “Life of Jesus,” the object of which is to show that Christ was but a common man, and that all his miracles were either fabrications or clever deceptions! When we consider that this audaciously blas-

phemous work, though comprising only two plain octavo volumes, sells in London at the now very high price of a guinea and a-half, and that two editions were exhausted in little more than twelve months, we may judge of the dangerous interest that it excites. Here is one of the most daring attempts ever known to uproot christianity, for Strauss attacks no sect—his efforts being all directed to the one point, that of proving, or rather a christian should say endeavouring to prove, our Saviour to be an impostor! Are we then, by continuing the teaching of a trickish logic and an admiration of heathen impurity, to aid this wicked wretch—to be at least indirectly his allies, in his profane war against christianity? We see the deistical wolf prowling in our Gospel fields, and shall we still hesitate to secure the sheep?

If virtuous mothers knew the full extent of the impositions that are practised on them—if they really knew what lessons their sons are getting under the high sounding name of “classical learning,” and *assisted* by a truth-pervverting, and “worse than trifling” logic—if they knew what are called improvements in education, as for instance that *expurgata* editions, or those purified of the passages offensive or hurtful to morals, which were once in use, are now exploded—if they knew, I say, what is doing in colleges, which give the law to schools, they would exert that control to which they are legitimately entitled, and effect a reformation “most devoutly to be wished for.” I repeat

that they have a legitimate right. For, since men have so heinously abused the high trust reposed in them, there is now no other resource than in female interference.

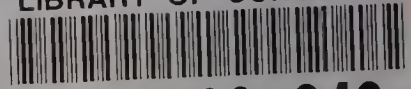
I am barely in time to notice the Course of Trinity College, Dublin, for 1839, which is just announced. There is an augmentation of the *old* logic, while Bacon remains as before, which we may presume to be in conformity to the *judicious* determination of our British universities. Such are the auspicious prospects for christianity, the diffusion of light, the spread of sound principles, the promotion of honest reasoning, the——— But the printer is waiting for copy, and I must now content myself with three notes of admiration—one of them for college wisdom in general, another for its unflinching veneration of heathen precepts, and the third for its magnanimous contempt of Bacon's Idols and Induction !!!

THE END.

WILLIAM HOLDEN, Printer, 10, Abbey-street, Dublin.

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